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WORKS

OF THE

REVERED AND LEARNED

ISAAC WATTS, D.D.

CONTAINING, BESIDES HIS

SERMONS, AND ESSAYS ON MISCELLANEOUS SUBJECTS,

SEVERAL ADDITIONAL PIECES,

Selected from his Manuscripts

BY THE

REV. DR. JENNINGS, AND THE REV. DR. DODDRIDGE, IN 1753:

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MEMOIRS OF THE LIFE OF THE AUTHOR,

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BY THE REV. GEORGE BURDER.

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CONTENTS

OF THE

FIFTH VOLUME.

LOGICK: OR, THE RIGHT USE OF REASON IN THE INQUIRY AFTER TRUTH.

PAGE

THE Introduction and general Scheme 5

THE FIRST PART OF LOGICK.

Of Perceptions and Ideas - - - - - - 9

CHAPTER I.

Of the Nature of Ideas - - - - - - - 9

CHAPTER II.

Of the Objects of Perception - - - - 10

SECT. I. Of Being in general - - - - 10

SECT. II. Of Substances, and their various Kinds - - - - - - - - - - - 11

SECT. III. Of Modes in their various Kinds; and first of essential and accidental Modes - - - - - - - - - 13

SECT. IV. The further Divisions of Mode 16

SECT. V. Of the Ten Categories. Of Substance modified - - - - - - - 18

SECT. VI. Of Not-Being - - - - - 18

CHAPTER III.

Of the several Sorts of Perceptions or Ideas - - - - - - - - - - - - 19

SECT. I. Of sensible, spiritual, and abstracted Ideas - - - - - - - - - 19

SECT II. Of simple and complex, compound and collective Ideas - - - - 22

SECT. III. Of universal and particular Ideas, real and imaginary - - - - - 22

SECT. IV. The Division of Ideas, with Regard to their Qualities - - - - - 25

PAGE

CHAPTER IV.

Of Words and their several Divisions, together with the Advantage and Danger of them - - - - - - - - - - - 28

SECT. I. Of Words in general, and their Use - - - - - - - - - - - - 28

SECT. II. Of negative and positive Terms 31

SECT. III. Of simple and complex Terms 32

SECT. IV. Of Words, common and proper 33

SECT. V. Of concrete and abstract Terms 34

SECT. VI. Of univocal and equivocal Terms - - - - - - - - - - - 34

SECT. VII. Various Kinds of equivocal Words - - - - - - - - - - - 35

SECT. VIII. The Origin, or Causes of equivocal Words - - - - - - - - 38

CHAPTER V.

General Directions relating to our Ideas 40

CHAPTER VI.

Special Rules to direct our Conceptions of Things - - - - - - - - - - - 44

SECT. I. Of gaining clear and distinct Ideas - - - - - - - - - - - - 44

SECT. II. Of the Definition of Words or Names - - - - - - - - - - - 45

SECT. III. Directions concerning the Definition of Names - - - - - - - - 46

SECT. IV. Of the Definition of Things - 53

PAGE

SECT. V. Rules of Definition of the Thing 55

SECT. VI. Observations concerning the Definition of Things - - - - - - 57

SECT. VII. Of a complete Conception of Things - - - - - - - - - - - - 61

SECT. VIII. Of Division, and the Rules of it - - - - - - - - - - - - 62

SECT. IX. Of a comprehensive Conception of Things, and of Abstraction - - 64

SECT. X. Of the extensive Conception of Things, and of Distribution - - - - 66

SECT. XI. Of an orderly Conception of Things - - - - - - - - - - - - 69

SECT. XII. These Five Rules of Conception exemplified - - - - - - - - 69

SECT. XIII. An Illustration of these Five Rules by Similitudes - - - - - - - 71

THE SECOND PART OF LOGICK.

Of Judgment and Proposition - - - - 73

CHAPTER I.

Of the Nature of a Proposition, and its several Parts - - - - - - - - - - 74

CHAPTER II.

Of the various Kinds of Propositions - - 75

SECT. I. Of universal, particular, indefinite, and singular Propositions - - - 75

SECT. II. Of affirmative and negative Propositions - - - - - - - - - - - - 79

SECT. III. Of the Opposition and Conversion of Propositions - - - - - - 81

SECT. IV. Of pure and modal Propositions - - - - - - - - - - - - - - 82

SECT. V. Of single Propositions, whether simple or complex - - - - - - - 83

SECT. VI. Of compound Propositions - - 84

SECT. VII. Of true and false Propositions 87

SECT. VIII. Of certain and dubious Propositions of Knowledge and Opinion - 89

SECT. IX. Of Sense, Consciousness, Intelligence, Reason, Faith, and Inspiration - - - - - - - - - - - - 90

PAGE

CHAPTER III.

The Springs of false Judgment, or the Doctrine of Prejudices - - - - - - - - 94

Introduction - - - - - - - - - - - - 94

SECT. I. Prejudices arising from Things - 95

SECT. II. Prejudices arising from Words 98

SECT. III. Prejudices arising from Ourselves - - - - - - - - - - - - - 100

SECT. IV. Prejudices arising from other Persons - - - - - - - - - - - - 107

CHAPTER IV.

General Directions to assist us in judging aright - - - - - - - - - - - - 115

CHAPTER V.

Special Rules to direct us in judging of particular Objects - - - - - - - - 123

SECT. I. Principles and Rules of Judgment concerning the Objects of Sense - 124

SECT. II. Principles and Rules of Judgment in Matters of Reason and Speculation - - - - - - - - - - - - - 126

SECT. III. Principles and Rules of Judgment in Matters of Morality and Religion - - - - - - - - - - - - - 128

SECT. IV. Principles and Rules of Judgment in Matters of human Pudence - 131

SECT. V. Principles and Rules of Judgment in Matters of human Testimony - 132

SECT. VI. Principles and Rules of Judgment in Matters of Divine Testimony - 134

SECT. VII. Principles and Rules of judging concerning Things past, present, and to come, by the mere Use of Reason - - 136

THE THIRD PART OF LOGICK.

Of Reasoning and Syllogism - - - - 138

CHAPTER I.

Of the Nature of a Syllogism, and the Parts of which it is composed - - - 138

CHAPTER II.

Of the various Kinds of Syllogisms, with particular Rules relating to them - - 140

SECT. I. Of universal and particular Syllogisms, both negative and affirmative - 140

PAGE

SECT. II. Of plain simple Syllogisms, and their Rules - - - - - - - - - - - 141

SECT. III. Of the Moods and Figures of simple Syllogisms - - - - - - - - 142

SECT. IV. Of complex Syllogisms - - 144

SECT. V. Of conjunctive Syllogisms - - 146

SECT. VI. Of compound Syllogisms - - 148

SECT. VII. Of the Middle Terms, of common Places or Topics, and Invention of Arguments - - - - - - - - - - - 150

SECT. VIII. Of several Kinds of Arguments and Demonstrations - - - - - 152

CHAPTER III.

The Doctrine of Sophisms - - - - - 154

SECT. I. Of several Kinds of Sophisms, and their Solution - - - - - - - 154

PAGE

SECT. II. Two general Tests of true Syllogisms, and Methods of solving all Sophisms - - - - - - - - - - - 158

CHAPTER IV.

Some general Rules to direct our Reasoning 160

THE FOURTH PART OF LOGICK.

Of Disposition and Method - - : - - 166

CHAPTER I.

Of the Nature of Method, and the several Kinds of it, *viz.* natural and arbitrary, synthetic and analytic - - - - - - 166

CHAPTER II.

The Rules of Method, general and particular - - - - - - - - - - - - 171

THE IMPROVEMENT OF THE MIND;

OR, A SUPPLEMENT TO THE ART OF LOGICK.

PART I.

Directions for the Attainment of useful Knowledge - - - - - - - - - - 185

Introduction - - - - - - - - - - - 185

CHAPTER I.

General Rules for the Improvement of Knowledge - - - - - - - - - - 187

CHAPTER II.

Observation, Reading, Instruction by Lectures, Conversation, and Study, compared 196

CHAPTER III.

Rules relating to Observation - - - - 203

CHAPTER IV.

Of Books and Reading - - - - - - - 207

CHAPTER V.

Judgment of Books - - - - - - - - 213

CHAPTER VI.

Of living Instructions and Lectures, of Teachers and Learners - - - - - - 221

CHAPTER VII.

Of learning a Language - - - - - - 223

CHAPTER VIII.

Of inquiring into the Sense and Meaning of any Writer or Speaker, and especially the Sense of the sacred Writings - - - 228

CHAPTER IX.

Rules of Improvement by Conversation - 230

CHAPTER X.

Of Disputes - - - - - - - - - - - 239

CHAPTER XI.

The Socratical Way of Disputation - - 246

CHAPTER XII.

Of forensic Disputes - - - - - - - 248

PAGE

CHAPTER XIII.

Of academic or scholastic Disputation - - 249

CHAPTER XIV.

Of Study, or Meditation - - - - - - 255

CHAPTER XV.

Of fixing the Attention - - - - - - 262

CHAPTER XVI.

Of enlarging the Capacity of the Mind - 264

CHAPTER XVII.

Of improving the Memory - - - - - 274

CHAPTER XVIII.

Of determining a Question - - - - - 287

CHAPTER XIX.

Of inquiring into Causes and Effects - - 298

CHAPTER XX.

Of the Sciences, and their Use in particular Professions - - - - - - - - - - 300

PART II.

The Communication of Useful Knowledge 317

Introduction - - - - - - - - - - 321

CHAPTER I.

Methods of Teaching, and reading Lectures 321

PAGE

CHAPTER II.

Of an instructive Style - - - - - - - 325

CHAPTER III.

Of convincing other Persons of any Truth, or delivering them from Errors and Mistakes - - - - - - - - - - - - 329

CHAPTER IV.

Of Authority. Of the Abuse of it: And of its real and proper Use and Service - - 333

CHAPTER V.

Of treating and managing the Prejudices of Men - - - - - - - - - 338

CHAPTER VI.

Of Instruction by Preaching - - - - 344

Sect. I. Wisdom better than Learning in the Pulpit - - - - - - - - - - 344

Sect. II. A branching Sermon - - - 347

Sect. III. The Harangue - - - - - 348

CHAPTER VII.

Of writing Books for the Public - - - 351

CHAPTER VIII.

Of Writing and Reading Controversies - 354

Sect. I. Of writing Controversies - - 354

Sect. II. Of reading Controversies - - 355

A DISCOURSE ON THE EDUCATION OF CHILDREN AND YOUTH.

INTRODUCTION.

Of the Importance of Education, and the Design of this Discourse, with a Plan of it - - - - - - - - - - - - 357

SECTION I.

Of instructing Children in Religion - - 358

SECTION II.

The Exercise and Improvement of their natural Powers - - - - - - - - 360

SECTION III.

Self-Government - - - - - - - - - 365

PAGE

SECTION IV.

The common Arts of Reading and Writing 369

SECTION V.

Of a Trade or Employment - - - - - 371

SECTION VI.

Rules of Prudence - - - - - - - - 373

SECTION VII.

The Ornaments and Accomplishments of Life - - - - - - - - - - - - 375

SECTION VIII.

A Guard against evil Influences from Persons and Things - - - - - - - - 380

PAGE

SECTION IX.

A Guard set on the Sports and Diversions of Children - - - - - - - - - 383

SECTION X.

Of the proper Degrees of Liberty and Restraint in the Education of a Son, illustrated by Example - - - - - - - 392

SECTION XI.

Of proper Degrees of Liberty and Restraint in the Education of Daughters, illustrated by Examples - - - - - - - - - 401

THE KNOWLEDGE OF THE HEAVENS AND EARTH MADE EASY;

OR, THE FIRST PRINCIPLES OF GEOGRAPHY AND ASTRONOMY EXPLAINED BY THE USE OF GLOBES AND MAPS.

SECTION I.

Of the Spheres or Globes of the Heaven and Earth - - - - - - - - - - 413

SECTION II.

Of the greater Circles - - - - - - - 414

SECTION III.

Of the lesser Circles - - - - - - - 417

SECTION IV.

Of the Points - - - - - - - - - - 418

SECTION V.

Of Longitude and Latitude on the earthly Globe, and of different Climates - - - 420

SECTION VI.

Of Right Ascension, Declination, and Hour-Circles - - - - - - - - 423

SECTION VII.

Of Longitude and Latitude on the heavenly Globe, and of the Nodes and Eclipses of the Planets - - - - - - - - - - 425

SECTION VIII.

Of Altitude, Azimuth, Amplitude, and various Risings and Settings of the Sun and Stars - - - - - - - - - - 427

SECTION IX.

Of the Inhabitants of the Earth, according to the Positions of the Sphere, the Zones, &c. - - - - - - - - - - - - - 429

SECTION X.

The natural Description of the Earth and Waters, on the Terrestrial Globe - - 433

SECTION XI.

Of Maps and Sea-Charts - - - - - - 436

SECTION XII.

The political Divisions of the Earth represented on the Globe - - - - - - 439

SECTION XIII.

Of Europe, and its several Countries and Kingdoms - - - - - - - - - - 439

SECTION XIV.

Of Asia, and its several Countries and Kingdoms - - - - - - - - - - 442

SECTION XV.

Of Africa, and its Divisions - - - - - 443

SECTION XVI.

Of America, and its Divisions - - - - 444

PAGE

SECTION XVII.

Of the Fixed Stars on the Heavenly Globe 446

SECTION XVIII.

Of the Planets and Comets - - - - - 448

SECTION XIX.

Problems relating to Geography and Astronomy, to be performed by the Globe - 452

PAGE

SECTION XX.

Problems relating to Geography and Astronomy, to be performed by the Use of the plain Scale and Compasses - - - - 465

SECTION XXI

Tables of the Sun's Declination, and of the Declination and Right Ascension of several remarkable fixed Stars, together with some Account how they are to be used 488

PHILOSOPHICAL ESSAYS, ON VARIOUS SUBJECTS.

Preface - - - - - - - - - - - - 499

ESSAY I.

A fair Inquiry and Debate concerning Space, whether it be something or nothing, God or a Creature? - - - - - - - - 503

Sect. I. The Subject explained in general 503

Sect. II. Is Space something, or nothing? 503

Sect. III. Is Space a Substance? - - - 504

Sect. IV. Is Space created, or increated? 506

Sect. V. Space cannot be God - - - 507

Sect. VI. A Review and Recollection of the Argument - - - - - - - - 510

Sect. VII. The Original of our Idea of Space, and our Danger of a Mistake - - 512

Sect. VIII. Space compared to Shadow, or Darkness - - - - - - - - - 512

Sect. IX. Space inactive and impassive 514

Sect. X. A Re-examination whether Space has any real Properties? - - - 515

Sect. XI. An Objection against the Nihility of Space answered - - - - - 517

Sect. XII. Space nothing real, but a mere abstract Idea - - - - - - - 519

Appendix - - - - - - - - - - 520

ESSAY II.

Of Substance: And of solid Extension and a thinking Power, as the two only original Substances - - - - - - - - - - 521

Sect. I. Mr. Locke's Notion of Substance considered - - - - - - - - - 521

Sect. II. The plain Idea or Notion of Substance applied to Mind and Body - 522

Sect. III. Considerations to support the Application of the Name of Substance to solid Extension and a thinking Power 524

Sect. IV. The Occasions of Mistake on this Subject - - - - - - - - - 527

ESSAY III.

Of the Original of our Perceptions and Ideas - - - - - - - - - - - - 531

ESSAY IV.

Of innate Ideas - - - - - - - - - 541

Sect. I. The common Opinion well refuted by Mr. Locke - - - - - - - 541

Sect. II. In what Sense many Ideas are innate - - - - - - - - - - - 542

Sect. III. In what Sense some Truths may be innate - - - - - - - - - 543

Sect. IV. In what Sense some Rules of Duty may be innate - - - - - - - 544

Sect. V. Of the Foundations of moral Virtue, and of a moral Sense, or Instinct 545

ESSAY V.

An Inquiry whether the Soul thinks always 548

Sect. I. Considerations toward the Proof of it - - - - - - - - - - - - 548

Sect. II. Of Dreams, why not remembered - - - - - - - - - - - - 550

Sect. III. Mr. Locke's Objections answered - - - - - - - - - - - - 552

Corollaries - - - - - - - - - - 555

PAGE

ESSAY VI.

Of the Power of Spirits to move Bodies, of their being in a Place, and removing from it - - - - - - - - - - - - - - - 556

Sect. I. Of the Power of a Spirit to move Matter - - - - - - - - - - 556

Sect. II. Of Spirits being in a Place, and removing thence - - - - - - - - - 561

Sect. III. The First Objection against the Locality of Spirits answered - - - - 564

Sect. IV. Other Objections answered against the Locality of Spirits - - - 567

Sect. V. The *Ubi*, or Whereness, of a Spirit - - - - - - - - - - - - 569

Conclusion - - - - - - - - - - - - - 570

ESSAY VII.

The departing Soul - - - - - - - - - 572

ESSAY VIII.

The Resurrection of the same Body - - 576

ESSAY IX.

Of the Production, Nourishment, and Operations of Plants and Animals - - - 581

Sect. I. Creatures produce their own Kind - - - - - - - - - - - - - 581

Sect. II. The Laws of Nature sufficient for the Production of Animals and Vegetables - - - - - - - - - - - - - 583

Appendix - - - - - - - - - - - - - 586

Sect. III. Of the Nourishment and Growth of Plants - - - - - - - - - 589

Sect. IV. Of the Nourishment and Growth of Animals - - - - - - - - 591

PAGE

Sect. V. An amusing Digression, concerning the Changes of Matter - - - 594

Sect. VI. The similar Operations of Plants and Animals - - - - - - - - 597

Sect. VII. Of the Principles of Action in Brutes and Men - - - - - - - - 599

ESSAY X.

Of Sun-Beams and Star-Beams - - - - 603

Sect. I. Is the Ether beyond our Atmosphere a mere Vacuity? - - - - - - 603

Sect. II. Doth the World grow bigger or less? - - - - - - - - - - - - 605

ESSAY XI.

On some metaphysical Subjects - - - - 608

Sect. I. Of Nature and Essence - - - 608

Sect. II. Of Matter and Form - - - 610

Sect. III. Of the different Senses of the Word *Nature* - - - - - - - - - - 612

Sect. IV. Of Creation or Conservation - 613

ESSAY XII.

Remarks on some Chapters of Mr. Locke's Essay on the Human Understanding - 615

Sect. I. Of sensible Qualities, and particularly of Colour - - - - - - - - - 615

Sect. II. Of Succession and Duration - 616

Sect. III. Of Infinity - - - - - - - 617

Sect. IV. Of Power.—Book II. Chapter XXI. - - - - - - - - - - - - 618

Sect. V. Whether Liberty can be ascribed to the Will? - - - - - - - - - 619

Sect. VI. Of complex Ideas and mixed Modes - - - - - - - - - - - - 620

Sect. VII. Of Identity and Diversity - 622

A BRIEF SCHEME OF ONTOLOGY;

OR, THE SCIENCE OF BEING IN GENERAL.

CHAPTER I.

Of Being and Not-Being, with a general Scheme of the Affections of Being - - 635

CHAPTER II.

Of Essence or Nature, Matter and Form - 636

CHAPTER III.

Of Existence, whether actual, possible or impossible, necessary or contingent, dependent or independent - - - - - - 638

CHAPTER IV.

Of Duration, Creation, and Conservation - 640

PAGE

CHAPTER V.

Of Unity and Union - - - - - - - - 641

CHAPTER VI.

Of Act and Power, Action and Passion, Necessity and Liberty - - - - - - - - 642

CHAPTER VII.

Of relative Affections or Relations - - - 645

CHAPTER VIII.

Of Truth, Goodness, and Perfection - - 646

CHAPTER IX.

Of the Whole and Parts - - - - - - - 648

CHAPTER X.

Of Principles, Causes, and Effects - - 649

CHAPTER XI.

Of Subject and Adjunct - - - - - - - 656

PAGE

CHAPTER XII.

Of Time, Place, and Ubiety - - - - - 657

CHAPTER XIII.

Of Agreement and Difference; of Sameness, and the Doctrine of Opposites - - 658

CHAPTER XIV.

Of Number and Order - - - - - - - 662

CHAPTER XV.

Of mental Relations, *viz.* Abstract Notions, Signs, Words, Terms of Art, &c. - - 662

CHAPTER XVI.

The chief Kinds or Divisions of Being, and first of Substance and Mode - - - - 665

CHAPTER XVII.

Of Finite and Infinite - - - - - - - 666

CHAPTER XVIII.

Of natural, moral, and artificial Beings and Ideas - - - - - - - - - - - - 667

THE RATIONAL FOUNDATION OF A CHRISTIAN CHURCH, AND THE TERMS OF CHRISTIAN COMMUNION.

TO WHICH ARE ADDED THREE DISCOURSES.

SECTION I.

Reason and Revelation agree to require social Religion - - - - - - - - - 673

SECTION II.

Instances of the Agreement of Reason and Revelation in social Religion - - - - 676

SECTION III.

A brief Inquiry how far the Modes of the Mission, or Ordination of primitive Ministers are our Rule now? - - - - - - 685

SECTION IV.

The Rest of the Instances wherein Reason and Revelation agree in Matters of social Worship - - - - - - - - - - 689

SECTION V.

Where Revelation is silent, Reason must direct - - - - - - - - - - - - 691

SECTION VI.

Christian Churches formed like civil Societies, upon the plain Nature and Reason of Things - - - - - - - - - - - 701

SECTION VII.

The several Advantages of such a Church, or christian Society - - - - - - - 703

SECTION VIII.

Of the Power of Churches to appoint holy Things or Actions - - - - - - - - 706

The Terms of Christian Communion - - 711

QUESTION I.

What is christian Communion; and what are the general and agreed Terms of it? 711

QUESTION II.

Who are the proper Judges of the Credibility of our Profession? - - - - - - 713

PAGE

QUESTION III.

What are the particular Terms of christian Communion? or, What Things are necessary to make the Profession of Christianity credible? - - - - - - - - - 720

QUESTION IV.

What is a Church Covenant? and Whether it be necessary to christian Communion? 727

QUESTION V.

When a Person is once joined to a particular Church, whether he may never worship with other Churches occasionally, or change his fixed Communion to another Church? - - - - - - - - - 730

QUESTION VI.

Whether fixed Communion with some particular Church be a necessary Duty? and Whether any may be admitted to occasional Communion, who are no fixed Members of any Church? - - - - 731

QUESTION VII.

What Knowledge is necessary for christian Communion? - - - - - - - - - - 734

QUESTION VIII.

In what Words and Expressions must our Faith be professed, in order to Communion? and In what manner must we profess it? - - - - - - - - - - - - 739

PAGE

QUESTION IX.

Where the Seclusion from christian Communion carries temporal Inconveniencies with it, hath a particular Church the Power to seclude a Person merely for Want of Orthodoxy? - - - - - - - 744

QUESTION X.

Whether a Profession to believe the express Words of Scripture, without any Explication, be an Evidence of Knowledge sufficient for christian Communion? - - 746

QUESTION XI.

Whether all Sorts of Protestants may join together as Members of the same Church? 761

QUESTION XII.

Whether no Christians must join in the same Communion but those that are in all Things of the same Opinion? - - - 768

DISCOURSE I.

A Pattern for a dissenting Preacher, *John* vii. 46. - - - - - - - - - - - - 773

DISCOURSE II.

A Sermon preached at the Separation of Two Deacons to their Office, 1 *Tim.* iii. 13. - - - - - - - - - - - - 785

DISCOURSE III.

Invitations to Church-Fellowship, *Psalm* lxv. 4. - - - - - - - - - - - - 794

LOGICK:

OR,

THE RIGHT USE OF REASON

IN THE

ENQUIRY AFTER TRUTH.

WITH

A VARIETY OF RULES TO GUARD AGAINST ERROR IN THE AFFAIRS OF RELIGION AND HUMAN LIFE, AS WELL AS IN THE SCIENCES.

TO

SIR JOHN HARTOPP, BART.

SIR,

IT is fit the public should receive through your hands what was written originally for the assistance of your younger studies, and was then presented to you.

It was by the repeated importunities of our learned friend Mr. John Eames, that I was persuaded to revise these *Rudiments of Logick*, and when I had once suffered myself to begin the work, I was drawn still onward, far beyond my first design, even to the neglect, or too long delay, of other pressing and important demands that were upon me.

It has been my endeavour to form every part of this Treatise both for the instruction of students, to open their way into the sciences, and for the more extensive and general service of mankind, that the gentleman and the christian might find their account in the perusal, as well as the scholar. I have therefore collected and proposed the chief principles and rules of right judgment in matters of common and sacred importance, and pointed out our most frequent mistakes and prejudices in the concerns of life and religion, that we might better guard against the springs of error, guilt and sorrow, which surround us in every state of mortality.

You know, Sir, the great design of this noble science is to rescue our reasoning powers from their unhappy slavery and darkness; and thus, with all due submission and deference, it offers an humble assistance to divine revelation. Its chief business is to relieve the natural weaknesses of the mind, by some better efforts of nature: It is to diffuse a light over the understanding in our enquiries after truth, and not to furnish the tongue with debate and controversy. True Logick is not that noisy thing that deals all in dispute and wrangling, to which former ages had debased and confined it; yet its disciples must acknowledge also, that they are taught to vindicate and defend the truth, as well as to search it out. True Logick doth not require a long detail of hard words to amuse mankind, and to puff up the mind with empty sounds, and a pride of false learning; yet some distinctions and terms of art are necessary to range

every idea in its proper class, and to keep our thoughts from confusion. The world is now grown so wise, as not to suffer this valuable art to be engrossed by the schools: In so polite and knowing an age, every man of reason will covet some acquaintance with Logick, since it renders its daily service to wisdom and virtue, and to the affairs of common life as well as to the sciences.

I will not presume, Sir, that this little Book is improved since its first composure, in proportion to the improvements of your manly age. But when you shall please to review it in your retired hours, perhaps you may refresh your own memory in some of the early parts of learning. And if you find all the additional Remarks and Rules made so familiar to you already by your own observation, that there is nothing new among them, it will be no unpleasing reflection that you have so far anticipated the present zeal and labour of,

SIR,

Your most faithful

and obedient Servant,

I. WATTS.

London, Aug. 24, 1724.

LOGICK:

OR,

THE RIGHT USE OF REASON.

THE INTRODUCTION AND GENERAL SCHEME.

LOGICK is the art of using REASON* well in our enquiries after truth, and the communication of it to others.

REASON* is the glory of human nature, and one of the chief eminences whereby we are raised above our fellow-creatures, the brutes, in this lower world.

Reason, as to the power and principle of it, is the common gift of God to all men; though all are not favoured with it by nature in an equal degree: But the acquired improvement of it in different men, makes a much greater distinction between them than nature had made. I could even venture to say, that the improvement of reason hath raised the learned and the prudent in the European world, almost as much above the Hottentots, and other savages of Africa, as those savages are by nature superior to the birds, the beasts, and the fishes.

Now the design of Logick is to teach us the right use of our reason, or intellectual powers, and the improvement of them in ourselves and others: This is not only necessary in order to attain any competent knowledge in the sciences, or the affairs of learning, but to govern both the greater and the meaner actions of life. It is the cultivation of our reason by which we are better enabled to distinguish good from evil, as well as truth from falsehood: And both these are matters of the highest importance, whether we regard this life, or the life to come.

The pursuit and acquisition of truth is of infinite concernment to mankind. Hereby we become acquainted with the nature of things both in heaven and earth, and their various relations to each other. It is by this means we discover our duty to God and

* The word reason in this place is not confined to the mere faculty of reasoning, or inferring one thing from another, but includes all the intellectual powers of man.

our fellow-creatures: By this we arrive at the knowledge of natural religion, and learn to confirm our faith in divine revelation, as well as to understand what is revealed. Our wisdom, prudence and piety, our present conduct and our future hope, are all influenced by the use of our rational powers in the search after truth.

There are several things that make it very necessary that our reason should have some assistance in the exercise or use of it.

The first is, the depth and difficulty of many truths, and the weakness of our reason to see far into things at once, and penetrate to the bottom of them. It was a saying among the ancients, *Veritas in puteo*, "Truth lies in a well;" and, to carry on this metaphor, we may very justly say, that Logick does, as it were, supply us with steps whereby we may go down to reach the water; or it frames the links of a chain, whereby we may draw the water up from the bottom. Thus by the means of many reasonings well connected together, philosophers in our age have drawn a thousand truths out of the depths of darkness, which our fathers were utterly unacquainted with.

Another thing that makes it necessary for our reason to have some assistance given it, is the disguise and false colours in which many things appear to us in this present imperfect state. There are a thousand things which are not in reality what they appear to be, and that both in the natural and the moral world: So the sun appears to be flat as a plate of silver, and to be less than twelve inches in diameter: The moon appears to be as big as the sun, and the rainbow appears to be a large substantial arch in the sky; all which are in reality gross falsehoods. So knavery puts on the face of justice, hypocrisy and superstition wear the vizard of piety, deceit and evil are often clothed in the shapes and appearances of truth and goodness. Now Logick helps us to strip off the outward disguise of things, and to behold them, and judge of them in their own nature.

There is yet a farther proof that our intellectual or rational powers need some assistance, and that is, because they are so frail and fallible in the present state; we are imposed upon at home as well as abroad; we are deceived by our senses, by our imaginations, by our passions and appetites, by the authority of men, by education and custom, &c. and we are led into frequent errors, by judging according to these false and flattering principles, rather than according to the nature of things. Something of this frailty is owing to our very constitution, man being compounded of flesh and spirit; something of it arises from our infant state, and our growing up by small degrees to manhood, so that we form a thousand judgments before our reason is mature. But there is still more of it owing to our original defection from God, and the foolish and evil dispositions that are found in fallen man: So that one great part of the design of Logick is to guard us against the delusive influences of our meaner powers, to cure the mistakes of immature judgment, and to raise us in some measure from the ruins of our fall.

It is evident enough from all these things, that our reason needs the assistance of art in our enquiries after truth or duty; and without some skill and diligence in forming

our judgments aright, we shall be led into frequent mistakes, both in matters of science and in matters of practice, and some of these mistakes may prove fatal too.

The art of Logick, even as it assists us to gain the knowledge of the sciences, leads us on towards virtue and happiness: For all our speculative acquaintance with things should be made subservient to our better conduct in the civil and the religious life. This is infinitely more valuable than all speculations; and a wise man will use them chiefly for this better purpose.

All the good judgment and prudence that any man exerts in his common concerns of life, without the advantage of learning, is called natural Logick; and it is but a higher advancement, and a farther assistance of our rational powers, that is designed by and expected from this artificial Logick.

In order to attain this, we must enquire what are the principal operations of the mind, which are put forth in the exercise of our reason; and we shall find them to be these four, namely, Perception, Judgment, Argumentation and Disposition.

Now the art of Logick is composed of those observations and rules, which men have made about these four operations of the mind, perception, judgment, reasoning, and disposition, in order to assist and improve them.

I. Perception, conception, or apprehension, is the mere simple contemplation of things offered to our minds, without affirming or denying any thing concerning them. So we conceive or think of a horse, a tree, high, swift, slow, animal, time, motion, matter, mind, life, death, &c. The form under which these things appear to the mind, or the result of our conception or apprehension is called an idea.

II. Judgment is that operation of the mind, whereby we join two or more ideas together by one affirmation or negation; that is, we either affirm or deny this to be that. So, this tree is high; that horse is not swift; the mind of man is a thinking being; mere matter has no thought belonging to it; God is just; good men are often miserable in this world; a righteous governor will make a difference betwixt the evil and the good; which sentences are the effect of judgment, and are called propositions.

III. Argumentation or reasoning is that operation of the mind, whereby we infer one thing, that is, one proposition, from two or more propositions premised. Or it is the drawing a conclusion, which before was either unknown, or dark, or doubtful, from some propositions which are more known and evident. So when we have judged that matter cannot think, and that the mind of man doth think, we then infer and conclude, that therefore the mind of man is not matter.

So we judge that a just governor will make a difference between the evil and the good; we judge also that God is a just governor; and from thence we conclude, that God will make a difference between the evil and the good.

This argumentation may be carried on farther, thus, God will one time or another make a difference between the good and the evil; but there is little or no difference made in this world; therefore there must be another world wherein this difference shall be made.

These inferences or conclusions are the effects of reasoning, and the three propositions taken all together are called a syllogism or argument.

IV. Disposition is that operation of the mind, whereby we put the ideas, propositions and arguments, which we have formed concerning one subject, into such an order as is fittest to gain the clearest knowledge of it, to retain it longest, and to explain it to others in the best manner: Or, in short, it is the ranging of our thoughts in such order, as is best for our own and others conception and memory. The effect of this operation is called method. This very description of the four operations of the mind and their effects, in this order, is an instance or example of method.

Now as the art of Logick assists our conceptions, so it gives us a large and comprehensive view of the subjects we enquire into, as well as a clear and distinct knowledge of them. As it regulates our judgment and our reasoning, so it secures us from mistakes, and gives us a true and certain knowledge of things; and as it furnishes us with method, so it makes our knowledge of things both easy and regular, and guards our thoughts from confusion.

Logick is divided into four parts, according to these four operations of the mind, which it directs, and therefore we shall treat of it in this order.

LOGICK.

THE FIRST PART.

OF PERCEPTION AND IDEAS.

THE first part of Logick contains observations and precepts about the first operation of the mind, perception or conception: And since all our knowledge, how wide and large soever it grows, is founded upon our conceptions and ideas, here we shall consider,

1. The general nature of them.
2. The objects of our conception, or the archetypes or patterns of these ideas.
3. The several divisions of them.
4. The words and terms whereby our ideas are expressed.
5. General directions about our ideas.
6. Special rules to direct our conceptions.

CHAPTER I.

OF THE NATURE OF IDEAS.

FIRST, the nature of conception or perception * shall just be mentioned, though this may seem to belong to another science rather than Logick.

Perception is that act of the mind, or, as some philosophers call it, rather a passion or impression, whereby the mind becomes conscious of any thing. As when I feel hunger, thirst, or cold, or heat; when I see a horse, a tree, or a man; when I hear a human voice, or thunder, I am conscious of these things, and this is called perception. If I study, meditate, wish, or fear, I am conscious of these inward acts also, and my mind perceives its own thoughts, wishes, fears, &c.

An idea is generally defined a representation of a thing in the mind; it is a representation of something that we have seen, felt, heard, &c. or been conscious of. That notion

* *Note*, The words *conception* and *perception* are often used promiscuously, as I have done here, because I would not embarrass a learner with too many distinctions; but if I were to distinguish them, I would say, *perception* is the consciousness of an object when present; *conception* is the forming an idea of the object whether present or absent.

or form of a horse, a tree, or a man, which is in the mind, is called the idea of a horse, a tree, or a man.

That notion of hunger, cold, sound, colour, thought, or wish, or fear, which is in the mind, is called the idea of hunger, cold, sound, wish, &c.

It is not the outward object, or thing which is perceived, namely, the horse, the man, &c. nor is it the very perception or sense and feeling, namely, of hunger, or cold, &c. which is called the idea; but it is the thing as it exists in the mind by way of conception, or representation, that is properly called the idea, whether the object be present or absent.

As a horse, a man, a tree, are the outward objects of our perception, and the outward archetypes or patterns of our ideas; so our own sensations of hunger, cold, &c. are also inward archetypes, or patterns of our ideas: But the notions or pictures of these things, as they are considered, or conceived in the mind, are precisely the ideas that we have to do with in Logick. To see a horse, or to feel cold, is one thing; to think of, and converse about a man, a horse, hunger, or cold, is another.

Among all these ideas, such as represent bodies, are generally called images, especially if the idea of shape be included. Those inward representations which we have of spirit, thought, love, hatred, cause, effect, &c. are more pure and mental ideas, belonging more especially to the mind, and carry nothing of shape or sense in them.—But I shall have occasion to speak more particularly of the original and distinction of ideas in the third chapter. I proceed therefore now to consider the objects of our ideas.

CHAPTER II.

OF THE OBJECTS OF PERCEPTION.

SECTION I.

OF BEING IN GENERAL.

THE object of perception is that which is represented in the idea, that which is the archetype or pattern, according to which the idea is formed: And thus judgments, propositions, reasons, and long discourses, may all become the objects of perception; but in this place we speak chiefly of the first and more simple objects of it, before they are joined and formed into propositions or discourses.

Every object of our idea is called a theme, whether it be a being or not-being, for not-being may be proposed to our thoughts, as well as that which has a real being. But let us first treat of beings, and that in the largest extent of the word.

A being is considered as possible, or as actual.

When it is considered as possible, it is said to have an essence or nature; such were all things before their creation: When it is considered as actual, then it is said to have existence also; such are all things which are created, and God himself the Creator.

Essence therefore is but the very nature of any being, whether it be actually existing or no. A rose in winter has an essence, in summer it has existence also.

Note, There is but one being which includes existence in the very essence of it, and that is God, who therefore actually exists by natural and eternal necessity: But the actual existence of every creature is very distinct from its essence, for it may be, or may not be, as God pleases.

Again, Every being is considered either as subsisting in and by itself, and then it is called a substance; or it subsists in and by another, and then it is called a mode or manner of being. Though few writers allow mode to be called a being in the same perfect sense as a substance is; and some modes have evidently more of real entity or being, than others, as will appear when we come to treat of them. These things will furnish us with matter for larger discourse in the following sections.

SECTION II.

OF SUBSTANCES, AND THEIR VARIOUS KINDS.

A SUBSTANCE is a being which can subsist by itself without dependence upon any other created being. The notion of subsisting by itself gives occasion to logicians to call it a substance. So a horse, a house, wood, stone, water, fire, a spirit, a body, an angel, are called substances, because they depend on nothing but God for their existence.

It has been usual also in the description of substance to add, it is that which is the subject of modes or accidents; a body is the substance or subject, its shape is the mode.

But lest we be led into mistakes, let us here take notice, that when a substance is said to subsist without dependence upon another created being, all that we mean is, that it cannot be annihilated, or utterly destroyed and reduced to nothing, by any power inferior to that of our Creator; though its present particular form, nature and properties may be altered and destroyed by many inferior causes; a horse may die and turn to dust; wood may be turned into fire, smoke, and ashes; a house into rubbish, and water into ice or vapour; but the substance or matter of which they are made still remains, though the forms and shapes of it are altered. A body may cease to be a house, or a horse, but it is a body still; and in this sense it depends only upon God for its existence.

Among substances some are thinking or conscious beings, or have a power of thought, such as the mind of man, God, angels. Some are extended and solid, or impenetrable; that is, they have dimensions of length, breadth and depth, and have also a power of resistance, or exclude every thing of the same kind from being in the same place. This is the proper character of matter or body.

As for the idea of space, whether it be void or full, that is, a vacuum or a plenum, whether it be interspersed among all bodies, or may be supposed to reach beyond the bounds of the creation, it is an argument too long and too hard to be disputed in this place what the nature of it is: It has been much debated whether it be a real substance, or a mere conception of the mind, whether it be the immensity of the divine nature, or the mere order of co-existent beings, whether it be the manner of our conception of the distances of bodies, or a mere nothing. Therefore I drop the mention of it here, and refer the reader to the first essay among the *Philosophical Essays*, by *I. W.* published 1733.

Now, if we seclude space out of our consideration, there will remain but two sorts of substances in the world, that is, matter and mind; or, as we otherwise call them, body and spirit; at least we have no ideas of any other substance but these.*

Among substances some are called simple, some are compound, whether the words be taken in a philosophical or a vulgar sense.

Simple substances, in a philosophical sense, are either spirits, which have no manner of composition in them, and in this sense God is called a simple being; or they are the first principles of bodies, which are usually called elements, of which all other bodies are compounded: Elements are such substances as cannot be resolved or reduced into two or more substances of different kinds.

The various sects of philosophers have attributed the honour of this name to various things. The peripateticks, or followers of Aristotle, made fire, air, earth, and water, to be the four elements, of which all earthly things were compounded; and they supposed the heavens to be a quintessence, or fifth sort of body, distinct from all these; but since experimental philosophy and mathematics have been better understood, this doctrine has been abundantly refuted. The chemists make spirit, salt, sulphur, water, and earth, to be their five elements, because they can reduce all terrestrial things to these five: This seems to come nearer the truth; though they are not all agreed in this enumeration of elements. In short, our modern philosophers generally suppose matter or body to be

* Because men have different ideas and notions of substance, I thought it not proper entirely to omit all accounts of them, and therefore have thrown them into the margin.

Some philosophers suppose that our acquaintance with matter or mind reaches no farther than the mere properties of them, and that there is a sort of unknown being, which is the substance or the subject by which these properties of solid extension and of cogitation are supported, and in which these properties inhere or exist. But perhaps this notion rises only from our turning the mere abstracted or logical notion of substance or self-subsisting into the notion of a distinct physical or natural being without any necessity. Solid extension seems to me to be the very substance of matter, or of all bodies; and a power of thinking, which is always in act, seems to be the very substance of all spirits; for God himself is an intelligent, almighty power; nor is there any need to seek for any other secret and unknown being, or abstracted substance entirely distinct from these, in order to support the several modes or properties of matter or mind, for these two ideas are sufficient for that purpose; therefore I rather think these are substances.

It must be confessed, when we say, spirit is a thinking substance, and matter is an extended solid substance, we are sometimes ready to imagine that extension and solidity are but mere modes and properties of a certain unknown substance or subject which supports them, and which we call body; and that a power of thinking is but a mere mode and property of some unknown substance or subject which supports it, and which we call spirit: But I rather take this to be a mere mistake, which we are led into by the grammatical form and use of words; and perhaps our logical way of thinking by substances and modes, as well as our grammatical way of talking by substantives and adjectives, help to delude us into the supposition.

However, that I may not be wanting to any of my readers, I would let them know Mr. Locke's opinion, which has obtained much in the present age, and it is this: "That our idea of any particular substance is only such a combination of simple ideas as represents that thing as subsisting by itself, in which the supposed or confused idea of substance, such as it is, is always ready to offer itself. It is a conjunction of ideas co-existing in such a cause of their union, and makes the whole subject subsist by itself, though the cause of their union be unknown; and our general idea of substance arises from the self-subsistence of this collection of ideas."

Now, if this notion of substance rest here, and be considered merely as an unknown cause of the union of properties, it is much more easy to be admitted; but if we proceed to support a sort of real, substantial, distinct being, different from solid quantity or extension in bodies, and different from a power of thinking in spirits, in my opinion it is the introduction of a needless scholastical notion into the real nature of things, and then fancying it to have a real existence.

Mr. Locke in his *Essay of Human Understanding* Book II. Chap. 22. § 2. seems to ridicule this common idea of substance, which men have generally supposed to be a sort of substratum distinct from all properties whatsoever, and to be the support of all properties. Yet, in Book IV. Chap. 3. § 6. he seems to suppose there may be some such unknown substratum, which may be capable of receiving the properties both of matter and mind, namely, extension, solidity, and cogitation; for he supposes it possible for God to add cogitation to that substance which is corporeal, and thus to cause matter to think. If this be true, then spirits, for ought we know, may be corporeal beings, or thinking bodies, which is a doctrine too favourable to the mortality of the soul. But I leave these debates to the philosophers of the age, and will not be too positive in my opinion of this abstruse subject.

See more of this argument in Philosophical Essays, before cited, Essay 2.

one simple principle, or solid extension, which being diversified by its various shapes, quantities, motions, and situations, makes all the varieties that are found in the universe; and therefore they make little use of the word element.

Compound substances are made up of two or more simple substances; so every thing in this whole material creation, that can be reduced by the art of man into two or more different principles or substances, is a compound body in the philosophical sense.

But, if we take the words simple and compound in a vulgar sense, then all those are simple substances, which are generally esteemed uniform in their natures. So every herb is called a simple, and every metal and mineral; though the chemist perhaps may find all his several elements in each of them. So a needle is a simple body, being only made of steel; but a sword or a knife is a compound, because its haft or handle is made of materials different from the blade. So the bark of Peru, or the juice of sorrel, is a simple medicine; but when the apothecaries' art has mingled several simples together, it becomes a compound, as diascordium or mithridate.

The terms of pure and mixed, when applied to bodies, are much akin to simple and compound. So a guinea is pure gold, if it has nothing but gold in it, without any alloy, or baser metal; but if any other mineral or metal be mingled with it, it is called a mixed substance or body.

Substances are also divided into animate and inanimate. Animated substances are either animal or vegetable.*

Some of the animated substances have various organical or instrumental parts fitted for a variety of motions from place to place, and a spring of life within themselves, as beasts, birds, fishes, and insects; these are called animals. Other animated substances are called vegetables, which have within themselves the principles of another sort of life and growth, and of various productions of leaves, flowers and fruit, such as we see in plants, herbs and trees.

And there are other substances, which are called inanimate, because they have no sort of life in them, as earth, stone, air, water, &c.

There is also one sort of substance or being, which is compounded of body and mind, or a rational spirit united to an animal; such is mankind. Angels, or any other beings of the spiritual and invisible world, who have assumed visible shapes for a season, can hardly be reckoned among this order of compounded beings, because they drop their bodies, and divest themselves of those visible shapes when their particular message is performed, and thereby shew that these bodies do not belong to their natures.

SECTION III.

OF MODES IN THEIR VARIOUS KINDS, AND FIRST OF ESSENTIAL AND ACCIDENTAL MODES.

THE next sort of objects which are represented in our ideas, are called modes or manners of being.†

* *Note*, Vegetables, as well as animals, have gotten the name of animated substances, because some of the ancients supposed herbs and plants, beasts, birds, &c. to have a sort of souls distinct from matter or body.

† *Note*, The term mode is by some authors applied chiefly to the relations or relative manners of being. But in logical treatises it is often used in a larger sense, and extends to all attributes whatsoever, and includes the most essential and inward properties, as well as outward respects and relations, and reaches to actions themselves as well as manners of actions.

A mode is that which cannot subsist in and of itself, but is always esteemed as belonging to, and subsisting by the help of some substance, which, for that reason, is called its subject. A mode must depend on that substance for its very existence and being; and that not as a being depends on its cause, for so substances themselves depend on God their Creator; but the very being of a mode depends on some substance for its subject, in which it is, or to which it belongs; so motion, shape, quantity, weight, are modes of body; knowledge, wit, folly, love, doubting, judging, are modes of the mind; for the one cannot subsist without body, and the other cannot subsist without mind.

Modes have their several divisions, as well as substances.

I. Modes are either essential or accidental.

An essential mode or attribute, is that which belongs to the very nature or essence of the subject wherein it is; and the subject can never have the same nature without it; such is roundness in a bowl, hardness in a stone, softness in water, vital motion in an animal, solidity in matter, thinking in a spirit; for though that piece of wood which is now a bowl may be made square, yet if roundness be taken away, it is no longer a bowl: So that very flesh and bones, which is now an animal, may be without life or inward motion; but if all motion be entirely gone, it is no longer an animal, but a carcase: So, if a body of matter be divested of solidity, it is a mere void space or nothing; and if spirit be entirely without thinking, I have no idea of any thing that is left in it; therefore, so far as I am able to judge, consciousness must be its essential attribute:* Thus all the perfections of God are called his attributes, for he cannot be without them.

An essential mode is either primary or secondary.

A primary essential mode is the first, or chief thing that constitutes any being in its particular essence or nature, and makes it to be that which it is, and distinguishes it from all other beings: This is called the difference in the definition of things, of which hereafter: So roundness is the primary essential mode, or the difference of a bowl: The meeting of two lines is the primary essential mode, or the difference of an angle: The perpendicularity of these lines to each other is the difference of a right angle: Solid extension is the primary attribute, or difference of matter: Consciousness, or at least a power of thinking, is the difference or primary attribute of a spirit;† and to fear and love God, is the primary attribute of a pious man.

A secondary essential mode is any other attribute of a thing, which is not of primary consideration: This is called a property: Sometimes indeed it goes toward making up the essence, especially of a complex being, so far as we are acquainted with it; sometimes it depends upon, and follows from the essence of it; so volubility, or aptness to roll, is the property of a bowl, and is derived from its roundness. Mobility and figure or shape are properties of matter; and it is the property of a pious man to love his neighbour.

An accidental mode, or an accident, is such a mode as is not necessary to the being of a thing, for the subject may be without it, and yet remain of the same nature that it

* *Note*, When I call solid extension an essential mode or attribute of matter, and a power of thinking an essential mode or attribute of a spirit, I do it in compliance with common forms of speech; but perhaps in reality these are the very essences or substances themselves, and the most substantial ideas that we can frame of body and spirit, and have no need of any, we know not what, substratum or unintelligible substance to support them in their existence or being.

† See the note in the foregoing and this page.

was before; or, it is that mode which may be separated or abolished from its subject; so smoothness or roughness, blackness or whiteness, motion or rest, are the accidents of a bowl; for these may be all changed, and yet the body remain a bowl still: Learning justice, folly, sickness, health, are the accidents of a man: Motion, squareness, or any particular shape or size, are the accidents of body; yet shape and size in general are essential modes of it; for a body must have some size and shape, nor can it be without them: So hope, fear, wishing, assenting, and doubting, are accidents of the mind, though thinking in general seems to be essential to it.

Here observe, that the name of accident has been oftentimes given by the old peripatetick philosophers to all modes, whether essential or accidental; but the moderns confine this word accident to the sense in which I have described it.

Here it should be noted also, that though the word property be limited sometimes in logical treatises to the secondary essential mode, yet it is used in common language to signify these four sorts of modes; of which some are essential, and some accidental.

1. Such as belong to every subject of that kind, but not only to those subjects. So yellow colour and ductility are properties of gold, they belong to all gold, but not only to gold; for saffron is also yellow, and lead is ductile.

2. Such as belong only to one kind of subject, but not to every subject of that kind. So learning, reading and writing, are properties of human nature; they belong only to man, but not to all men.

3. Such as belong to every subject of one kind, and only to them, but not always. So speech or language is a property of man, for it belongs to all men, and to men only; but men are not always speaking.

4. Such as belong to every subject of one kind, and to them only and always. So shape and divisibility are properties of body; so omniscience and omnipotence are properties of the divine nature; for in this sense properties and attributes are the same, and except in logical treatises there is scarce any distinction made between them. These are called *propria quarto modo* in the schools, or properties of the fourth sort.

Note, Where there is any one property or essential attribute, so superior to the rest, that it appears plainly that all the rest are derived from it, and such as is sufficient to give a full distinction of that subject from all other subjects, this attribute or property is called the essential difference, as is before declared; and we commonly say the essence of the thing consists in it; so the essence of matter in general seems to consist in solidity or solid extension. But for the most part we are so much at a loss in finding out the intimate essence of particular natural bodies, that we are forced to distinguish the essential difference of most things by a combination of properties. So a sparrow is a bird which has such coloured feathers, and such a particular size, shape, and motion. So wormwood is an herb which has such a leaf of such a colour, and shape, and taste, and such a root and stalk. So beasts and fishes, minerals, metals, and works of art sometimes, as well as of nature, are distinguished by such a collection of properties.

SECTION IV.

THE FURTHER DIVISIONS OF MODE.

II. THE second division of modes is into absolute and relative. An absolute mode is that which belongs to its subject, without respect to any other beings whatsoever; but a relative mode is derived from the regard that one being has to others. So roundness and smoothness are the absolute modes of a bowl; for if there were nothing else existing in the whole creation, a bowl might be round and smooth; but greatness and smallness are relative modes; for the very ideas of them are derived merely from the comparison of one being with others; a bowl of four inches diameter is very great, compared with one of an inch and a half; but it is very small in comparison of another bowl, whose diameter is eighteen or twenty inches. Motion is the absolute mode of a body, but swiftness or slowness are relative ideas; for the motion of a bowl on a bowling-green, is swift, when compared with a snail; and it is slow, when compared with a cannon bullet.

These relative modes are largely treated of by some logical and metaphysical writers under the name of relation: And these relations themselves are farther subdivided into such as arise from the nature of things, and such as arise merely from the operation of our minds; one sort are called real relations, the other mental; so the likeness of one egg to another, is a real relation, because it arises from the real nature of things; for whether there was any man or mind to conceive it or no, one egg would be like another: But when we consider an egg as a noun substantive in grammar, or as signified by the letters *e*, *g*, *g*, these are mere mental relations, and derive their very nature from the mind of man. These sort of relations are called by the schools *entia rationis*, or second notions, which have no real being, but depend entirely on the operation of the mind.

III. The third division of mode shews us, they are either intrinsical or extrinsical. Intrinsical modes are conceived to be in the subject or substance, as when we say, a globe is round, swift, or rolling, or at rest: Or when we say, a man is tall or learned, these are intrinsic modes: But extrinsic modes are such as arise from something that is not in the subject or substance itself; but it is a manner of being, which some substances attain by reason of something that is external or foreign to the subject; as, this globe lies within two yards of the wall; or this man is beloved or hated. Note, such sort of modes as this last example, are called external denominations.

IV. There is a fourth division much akin to this, whereby modes are said to be inherent or adherent, that is, proper or improper. Adherent or improper modes arise from the joining of some accidental substance to the chief subject, which yet may be separated from it; so when a bowl is wet, or a boy is clothed, these are adherent modes; for the water and the clothes are distinct substances, which adhere to the bowl or to the boy: But when we say, the bowl is swift or round; when we say the boy is strong or witty, these are proper or inherent modes, for they have a sort of in-being in the substance itself, and do not arise from the addition of any other substance to it.

V. Action and passion are modes or manners which belong to substances, and should not entirely be omitted here. When a smith with a hammer strikes a piece

of iron, the hammer and the smith are both agents, or subjects of action; the one is the prime or supreme, the other the subordinate: The iron is the patient, or the subject of passion in a philosophical sense, because it receives the operation of the agent; though this sense of the words passion and patient differs much from the vulgar meaning of them.*

VI. The sixth division of modes may be into physical (*i. e.* natural), civil, moral, and supernatural. So when we consider the apostle Paul, who was a little man, a Roman by the privilege of his birth, a man of virtue or honesty, and an inspired apostle; his low stature is a physical mode, his being a Roman is a civil privilege, his honesty is a moral consideration, and his being inspired is supernatural.

VII. Modes belong either to body or to spirit, or to both. Modes of body belong only to matter or to corporeal beings; and these are shape, size, situation, or place, &c. Modes of spirit belong only to minds; such are knowledge, assent, dissent, doubting, reasoning, &c. Modes which belong to both have been sometimes called mixed modes, or human modes, for these are only found in human nature, which is compounded both of body and spirit; such are sensation, imagination, passion, &c. in all which there is a concurrence of the operations both of mind and body, that is, of animal and intellectual nature.

But the modes of body may be yet farther distinguished. Some of them are primary modes or qualities, for they belong to bodies considered in themselves, whether there were any man to take notice of them or no; such are those before-mentioned, namely, shape, size, situation, &c. Secondary qualities, or modes, are such ideas as we ascribe to bodies on account of the various impressions which are made on the senses of men by them, and these are called sensible qualities, which are very numerous; such are all colours, as red, green, blue, &c. such are all sounds, as sharp, shrill, loud, hoarse; all tastes, as sweet, bitter, sour; all smells, whether pleasant, offensive, or indifferent; and all tactile qualities, or such as affect the touch or feeling, namely, heat, cold, &c. These are properly called secondary qualities, for though we are ready to conceive them as existing in the very bodies themselves which affect our senses, yet true philosophy has most undeniably proved, that all these are really various ideas or perceptions excited in human nature, by the different impressions that bodies make upon our senses by their primary modes, that is, by means of the different shape, size, motion, and position, of those little invisible parts that compose them. Thence it follows, that a secondary quality, considered as in the bodies themselves, is nothing else but a power or aptitude to produce such sensations in us: See Locke's Essay of the Understanding, Book II. Chap. 8.

VIII. I might add, in the last place, that as modes belong to substances, so there are some also that are but modes of other modes; for though they subsist in and by the substance, as the original subject of them, yet they are properly and directly attributed to some mode of that substance. Motion is the mode of a body; but the swiftness or slowness of it, or its direction to the North or South, are but modes of motion. Walking is the mode or manner of a man, or of a beast; but walking grace-

* *Note,* Agent signifies the doer, patient the sufferer, action is doing, passion is suffering: Agent and action have retained their original and philosophical sense, though patient and passion have acquired a very different meaning in common language.

fully implies a manner or mode superadded to that action. All comparative and superlative degrees of any quality, are the modes of a mode, as swifter implies a greater measure of swiftness.

It would be too tedious here to run through all the modes, accidents, and relations at large that belong to various beings, and are copiously treated of in general in the science called metaphysicks, or more properly ontology: They are also treated of in particular in those sciences which have assumed them severally as their proper subjects.

SECTION V.

OF THE TEN CATEGORIES.—OF SUBSTANCE MODIFIED.

WE have thus given an account of the two chief objects of our ideas, namely, substances and modes, and their various kinds: And in these last Sections we have briefly comprised the greatest part of what is necessary in the famous ten ranks of being, called the ten predicaments, or categories, of Aristotle, on which there are endless volumes of discourses formed by several of his followers. But that the reader may not utterly be ignorant of them, let him know the names are these: Substance, quantity, quality, relation, action, passion, where, when, situation, and clothing. It would be mere loss of time to shew how loose, how injudicious, and even ridiculous, is this tenfold division of things; and whatsoever farther relates to them, and which may tend to improve useful knowledge, should be sought in ontology, and in other sciences.

Besides substance and mode, some of the moderns would have us consider the substance modified as a distinct object of our ideas; but I think there is nothing more that need be said on this subject than this, namely, There is some difference between a substance when it is considered with all its modes about it, or clothed in all its manners of existence, and when it is distinguished from them, and considered naked without them.

SECTION VI.

OF NOT-BEING.

As being is divided into substance and mode, so we may consider not-being with regard to both these.

I. Not-being is considered as excluding all substance, and then all modes are also necessarily excluded; and this we call pure nihility or mere nothing.

This nothing is taken either in a vulgar or a philosophical sense; so we say, there is nothing in the cup, in a vulgar sense, when we mean there is no liquor in it; but we cannot say there is nothing in the cup, in a strict philosophical sense, where there is air in it, and perhaps a million of rays of light are there.

II. Not-being, as it has relation to modes or manners of being, may be considered either as a mere negation, or as a privation.

A negation is the absence of that which does not naturally belong to the thing we are speaking of, or which has no right, obligation, or necessity to be present with it; as when we say a stone is inanimate, or blind, or deaf, that is, it has no life, nor sight,

nor hearing; nor when we say a carpenter or a fisherman is unlearned, these are mere negations.

But a privation is the absence of what does naturally belong to the thing we are speaking of, or which ought to be present with it, as when a man or a horse is deaf, or blind, or dead, or if a physician or a divine be unlearned, these are called privations: So the sinfulness of any human action is said to be a privation; for sin is that want of conformity to the law of God, which ought to be found in every action of man.

Note, There are some writers who make all sorts of relative modes or relations, as well as all external denominations, to be mere creatures of the mind, and *entia rationis*, and then they rank them also under the general head of not-beings: But it is my opinion, that whatsoever may be determined concerning mere mental relations and external denominations, which seem to have something less of entity or being in them, yet there are many real relations, which ought not to be reduced to so low a class; such are the situation of bodies, their mutual distances, their particular proportions and measures, the notions of fatherhood, brotherhood, sonship, &c. all which are relative ideas. The very essence of virtue or holiness consists in the conformity of our actions to the rule of right reason, or the law of God: The nature and essence of sincerity is the conformity of our words and actions to our thoughts, all which are but mere relations; and I think we must not reduce such positive beings as piety, and virtue, and truth, to the rank of non-entities, which have nothing real in them, though sin, or rather the sinfulness of an action, may be properly called a not-being, for it is a want of piety and virtue. This is the most usual, and perhaps the justest way of representing these matters.

CHAPTER III.

OF THE SEVERAL SORTS OF PERCEPTIONS OR IDEAS.

IDEAS may be divided with regard to their original, their nature, their objects, and their qualities.

SECTION I.

OF SENSIBLE, SPIRITUAL, AND ABSTRACTED IDEAS.

THERE has been a great controversy about the origin of ideas, namely, whether any of our ideas are innate or no, that is, born with us, and naturally belonging to our minds. Mr. Locke utterly denies it; others as positively affirm it. Now, though this controversy may be compromised, by allowing that there is a sense, wherein our first ideas of some things may be said to be innate, as I have shewn in some remarks on Mr. Locke's Essay, which have lain long by me, yet it does not belong to this place and business to have that point debated at large, nor will it hinder our pursuit of the present work to pass it over in silence.

There is sufficient ground to say, that all our ideas, with regard to their original, may be divided into three sorts, namely, sensible, spiritual, and abstracted ideas.

I. Sensible or corporeal ideas, are derived originally from our senses, and from the communication which the soul has with the animal body in this present state; such are the notions we frame of all colours, sounds, tastes, figures, or shapes and motions: For our senses being conversant about particular sensible objects, become the occasions of several distinct perceptions in the mind, and thus we come by the ideas of yellow, white, heat, cold, soft, hard, bitter, sweet, and all those which we call sensible qualities. All the ideas which we have of body, and the several modes and properties that belong to it, seem to be derived from sensation.

And howsoever these may be treasured up in the memory, and by the work of fancy may be encreased, diminished, compounded, divided, and diversified, which we are ready to call our invention, yet they all derive their first nature and being from something that has been let into our minds by one or other of our senses. If I think of a golden mountain, or a sea of liquid fire, yet the single ideas of sea, fire, mountain, and gold, came into my thoughts at first by sensation; the mind has only compounded them.

II. Spiritual* or intellectual ideas are those which we gain by reflecting on the nature and actions of our own souls, and turning our thoughts within ourselves, and observing what is transacted in our own minds. Such are the ideas we have of thought, assent, dissent, judging, reason, knowledge, understanding, will, love, fear, hope.

By sensation the soul contemplates things, as it were out of itself, and gains corporeal representations, or sensible ideas: By reflection the soul contemplates itself and things within itself, and by this means it gains spiritual ideas, or representations of things intellectual.

Here it may be noted, though the first original of these two sorts of ideas, namely, sensible and spiritual, may be entirely owing to these two principles, sensation and reflection, yet the recollection and fresh excitation of them may be owing to a thousand other occasions and occurrences of life. We could never inform a man who was born blind or deaf, what we mean by the words yellow, blue, red, or by the words loud or shrill, nor convey any just ideas of these things to his mind, by all the powers of language, unless he has experienced those sensations of sound and colour; nor could we ever gain the ideas of thought, judgment, reason, doubting, hoping, &c. by all the words that man could invent, without turning our thoughts inward upon the actions of our own souls. Yet when once we have attained these ideas by sensation and reflection, they may be excited afresh by the use of names, words, signs, or by any thing else that has been connected with them in our thoughts; for when two or more ideas have been associated together, whether it be by custom, or accident, or design, the one presently brings the other to mind.

III. Besides these two which we have named, there is a third sort of ideas, which are commonly called abstracted ideas, because though the original ground or occasion of them may be sensation, or reflection, or both; yet these ideas are framed by another act of the mind, which we usually call abstraction. Now the word abstraction signifies a withdrawing some parts of an idea from other parts of it, by which means such abstracted ideas are formed, as neither represent any thing corporeal or spiritual, that is, any thing peculiar or proper to mind or body. Now these are of two kinds.

Some of these abstracted ideas are the most absolute, general and universal concep-

* Here the word spiritual is used in a mere natural, and not in a religious sense.

tions of things considered in themselves, without respect to others, such as entity or being, and not-being, essence, existence, act, power, substance, mode, accident, &c.

The other sort of abstracted ideas is relative, as when we compare several things together, and consider merely the relations of one thing to another, entirely dropping the subjects of those relations, whether they be corporeal or spiritual; such are our ideas of cause, effect, likeness, unlikeness, subject, object, identity, or sameness, and contrariety, order, and other things which are treated of in ontology.

Most of the terms of art, in several sciences, may be ranked under this head of abstracted ideas, as noun, pronoun, verb, in grammar, and the several particles of speech, as wherefore, therefore, when, how, although, howsoever, &c. so connections, transitions, similitudes, tropes, and their various forms in rhetoric.

These abstracted ideas, whether absolute or relative, cannot so properly be said to derive their immediate complete and distinct original, either from sensation, or reflection, (1.) Because the nature and the actions both of body and spirit give us occasion to frame exactly the same ideas of essence, mode, cause, effect, likeness, contrariety, &c. Therefore these cannot be called either sensible or spiritual ideas, for they are not exact representations either of the peculiar qualities or actions of spirit or body: But seem to be a distinct kind of idea framed in the mind, to represent our most general conceptions of things, or their relations to one another, without any regard to their natures, whether they be corporeal or spiritual. And, (2.) The same general ideas of cause and effect, likeness, &c. may be transferred to a thousand other kinds of being, whether bodily or spiritual, besides those from whence we first derived them: Even those abstracted ideas, which might be first occasioned by bodies, may be as properly afterward attributed to spirits.

Now, though Mr. Locke supposes sensation and reflection to be the two only springs of all ideas, and that these two are sufficient to furnish our minds with all that rich variety of ideas which we have; yet abstraction is certainly a different act of the mind, whence these abstracted ideas have their original; though perhaps sensation or reflection may furnish us with all the first objects and occasions whence these abstracted ideas are excited and derived. Nor in this sense and view of things, can I think Mr. Locke himself would deny my representation of the original of abstracted ideas, nor forbid them to stand for a distinct species.

Note, Though we have divided ideas in this chapter into three sorts, namely, sensible, spiritual, and abstracted; yet it may not be amiss just to take notice here, that as man may be called a compound substance, being made up of body and mind, and the modes which arise from this composition are called mixed modes, such as sensation, passion, discourse, &c. so the ideas of this substance, or being called man, and of these mixed modes, may be called mixed ideas, for they are not properly and strictly spiritual, sensible, or abstracted. See a much larger account of every part of this chapter in the *Philosophical Essays*, by *I. W.* Essay 3, 4. &c.

SECTION II.

OF SIMPLE AND COMPLEX, COMPOUND AND COLLECTIVE IDEAS.

IDEAS considered in their nature, are either simple or complex.

A simple idea is one uniform idea which cannot be divided or distinguished by the mind of man into two or more ideas; such are a multitude of our sensations, as the idea of sweet, bitter, cold, heat, white, red, blue, hard, soft, motion, rest, and perhaps extension and duration: Such are also many of our spiritual ideas; such as thought, wish, will, knowledge, &c.

A complex idea is made by joining two or more simple ideas together; as a square, a triangle, a cube, a pen, a table, reading, writing, truth, falsehood, a body, a man, a horse, an angel, a heavy body, a swift horse, &c. Every thing that can be divided by the mind into two or more ideas is called complex.

Complex ideas are often considered as single and distinct beings, though they may be made up of several simple ideas; so a body, a spirit, a house, a tree, a flower. But when several of these ideas of a different kind are joined together, which are wont to be considered as distinct single beings, this is called a compounded idea, whether these united ideas be simple or complex. So a man is compounded of body and spirit, so mithridate is a compound medicine, because it is made of many different ingredients: This I have shewn under the doctrine of substances. And modes also may be compounded; harmony is a compound idea, made up of different sounds united; so several different virtues must be united to make up the compounded idea or character, either of a hero or a saint.

But when many ideas of the same kind are joined together, and united in one name, or under one view, it is called a collective idea; so an army, or a parliament, is a collection of men; a dictionary, or nomenclatura, is a collection of words; a flock is a collection of sheep; a forest, or grove, a collection of trees; a heap is a collection of sand, or corn, or dust, &c.; a city is a collection of houses; a nosegay is a collection of flowers; a month, or a year, is a collection of days; and a thousand is a collection of units.

The precise difference between a compound and collective idea is this, that a compound idea unites things of a different kind, but a collective idea things of the same kind: Though this distinction in some cases is not accurately observed, and custom oftentimes uses the word compound for collective.

SECTION III.

OF UNIVERSAL AND PARTICULAR IDEAS, REAL AND IMAGINARY.

IDEAS, according to their objects, may first be divided into particular or universal.

A particular idea is that which represents one thing only.

Sometimes the one thing is represented in a loose and indeterminate manner, as when we say, some man, any man, one man, another man; some horse, any horse; one city, or another, which is called by the schools *individuum vagum*.

Sometimes the particular idea represents one thing in a determinate manner, and

then it is called a singular idea; such is Bucephalus, or Alexander's horse, Cicero the orator, Peter the apostle, the palace of Versailles, this book, that river, the new forest, or the city of London; that idea which represents one particular determinate thing to me, is called a singular idea, whether it be simple, or complex, or compound.

The object of any particular idea, as well as the idea itself, is sometimes called an individual: So Peter is an individual man, London is an individual city. So this book, one horse, another horse, are all individuals; though the word individual is more usually limited to one singular, certain, and determined object.

An universal idea is that which represents a common nature agreeing to several particular things, so a horse, a man, or a book, are called universal ideas, because they agree to all horses, men, or books.

And I think it not amiss to intimate, in this place, that these universal ideas are formed by that act of the mind which is called abstraction, that is, a withdrawing some part of an idea from other parts of it: For when singular ideas are first let into the mind by sensation or reflection, then, in order to make them universal, we leave out, or drop all those peculiar and determinate characters, qualities, modes, or circumstances, which belong merely to any particular individual being, and by which it differs from other beings; and we only contemplate those properties of it, wherein it agrees with other beings.

Though it must be confessed, that the name of abstracted ideas is sometimes attributed to universal ideas, both sensible or spiritual, yet this abstraction is not so great, as when we drop out of our idea every sensible or spiritual representation, and retain nothing but the most general and absolute conceptions of things, or their mere relations to one another, without any regard to their particular natures, whether they be sensible or spiritual. And it is to this kind of conceptions, we more properly give the name of abstracted ideas, as in the first section of this chapter.

An universal idea is either general or special.

A general idea is called by the schools a genus; and it is one common nature agreeing to several other common natures. So animal is a genus, because it agrees to horse, lion, whale, butterfly, which are also common ideas; so fish is a genus, because it agrees to trout, herring, crab, which are common natures also.

A special idea is called by the schools a species: It is one common nature that agrees to several singular individual beings; so horse is a special idea, or a species, because it agrees to Bucephalus, Trott, and Snowball. City is a special idea, for it agrees to London, Paris, Bristol.

Note, 1. Some of these universals are genuses, if compared with less common natures; and they are species, if compared with natures more common. So bird is a genus, if compared with eagle, sparrow, raven, which are also common natures: But it is a species, if compared with the more general nature, animal. The same may be said of fish, beast, &c.

This sort of universal ideas, which may either be considered as a genus, or a species, is called subaltern; but the highest genus, which is never a species, is called the most general; and the lowest species, which is never a genus, is called the most special.

It may be observed here also, that that general nature or property wherein one thing agrees with most other things, is called its more remote genus: So substance is the remote genus of bird or beast, because it agrees not only to all kinds of animals, but

also to things inanimate, as sun, stars, clouds, metals, stones, air, water, &c. but animal is the proximate or nearest genus of bird, because it agrees to fewest other things. Those general natures which stand between the nearest and most remote are called intermediate.

Note, 2. In universal ideas it is proper to consider their comprehension and their extension.*

The comprehension of an idea regards all the essential modes and properties of it; so body in its comprehension takes in solidity, figure, quantity, mobility, &c. So a bowl, in its comprehension, includes roundness, volubility, &c.

The extension of an universal idea regards all the particular kinds and single beings that are contained under it. So a body in its extension includes sun, moon, star, wood, iron, plant, animal, &c. which are several species, or individuals, under the general name of body. So a bowl in its extension includes a wooden bowl, a brass bowl, a white and black bowl, a heavy bowl, &c. and all kinds of bowls, together with all the particular individual bowls in the world.

Note, The comprehension of an idea is sometimes taken in so large a sense, as not only to include the essential attributes, but all the properties, modes, and relations whatsoever, that belong to any being, as will appear Chap. VI.

This account of genus and species is part of that famous doctrine of universals, which is taught in the schools, with divers other formalities belonging to it; for it is in this place that they introduce difference, which is the primary essential mode, and property, or the secondary essential mode, and accident, or the accidental mode; and these they call the five predicables, because every thing that is affirmed concerning any being must be either the genus, the species, the difference, some property, or some accident: But what farther is necessary to be said concerning these things will be mentioned when we treat of definition.

Having finished the doctrine of universal and particular ideas, I should take notice of another division of them, which also hath respect to their objects; and that is, they are either real or imaginary.

Real ideas are such as have a just foundation in nature, and have real objects or exemplars, which did, or do, or may actually exist, according to the present state and nature of things; such are all our ideas of long, broad, swift, slow, wood, iron, men, horses, thoughts, spirits, a cruel master, a proud beggar, a man seven feet high.

Imaginary ideas, which are also called fantastical or chimerical, are such as are made by enlarging, diminishing, uniting, dividing real ideas in the mind, in such a manner, as no objects, or exemplars, did or will ever exist, according to the present course of nature, though the several parts of these ideas are borrowed from real objects; such are the conceptions we have of a centaur, a satyr, a golden mountain, a flying horse, a dog without a head, a bull less than a mouse, or a mouse as big as a bull, and a man twenty feet high.

Some of these fantastic ideas are possible, that is, they are not utterly inconsistent in the nature of things; and therefore it is within the reach of divine power to make such objects; such are most of the instances already given; but impossibles carry an utter inconsistence in the ideas which are joined; such are self-active matter, and infinite or eternal men, a pious man without honesty, or heaven without holiness.

* *Note*, The word extension here is taken in a mere logical sense, and not in a physical and mathematical sense.

SECTION IV.

THE DIVISION OF IDEAS, WITH REGARD TO THEIR QUALITIES.

IDEAS, with regard to their qualities, afford us these several divisions of them.

I. They are either clear and distinct, or obscure and confused.

II. They are vulgar or learned.

III. They are perfect or imperfect.

IV. They are true or false.

I. Our ideas are either clear and distinct, or obscure and confused.

Several writers have distinguished the clear ideas from those that are distinct; and the confused ideas from those that are obscure; and it must be acknowledged, there may be some difference between them; for it is the clearness of ideas for the most part makes them distinct: And the obscurity of ideas is one thing that will always bring a sort of confusion into them. Yet when these writers come to talk largely upon this subject, and to explain and adjust their meaning with great nicety, I have generally found that they did not keep up the distinction they first designed, but they confound the one with the other. I shall therefore treat of clear or distinct ideas, as one and the same sort, and obscure or confused ideas, as another.

A clear and distinct idea is that which represents the object to the mind with full evidence and strength, and plainly distinguishes it from all other objects whatsoever.

An obscure and confused idea represents the object either so faintly, so imperfectly, or so mingled with other ideas, that the object of it doth not appear plain to the mind, nor purely in its own nature, nor sufficiently distinguished from other things.

When we see the sea and sky nearer at hand, we have a clear and distinct idea of each; but when we look far toward the horizon, especially in a misty day, our ideas of both are but obscure and confused; for we know not which is sea and which is sky. So when we look at the colours of the rainbow, we have a clear idea of the red, the blue, the green in the middle of their several arches, and a distinct idea too, while the eye fixes there; but when we consider the border of those colours, they so run into one another, that it renders their ideas confused and obscure. So the idea which we have of our brother, or our friend, whom we see daily, is clear and distinct; but when the absence of many years has injured the idea, it becomes obscure and confused.

Note here, That some of our ideas may be very clear and distinct in one respect, and very obscure and confused in another. So when we speak of a chiliagonum, or a figure of a thousand angles, we may have a clear and distinct rational idea of the number one thousand angles; for we can demonstrate various properties concerning it by reason: But the image or sensible idea which we have of the figure, is but confused and obscure; for we cannot precisely distinguish it by fancy from the image of a figure that has nine hundred angles, or nine hundred and ninety. So when we speak of the infinite divisibility of matter, we always keep in our minds a very clear and distinct idea of division and divisibility. But after we have made a little progress in dividing, and come to parts that are far too small for the reach of our senses, then our ideas, or sensible images of

these little bodies become obscure and indistinct, and the idea of infinite is very obscure, imperfect, and confused.

II. Ideas are either vulgar or learned. A vulgar idea represents to us the most obvious and sensible appearances that are contained in the object of them: But a learned idea penetrates further into the nature, properties, reasons, causes, and effects of things.—This is best illustrated by some examples.

It is a vulgar idea that we have of a rainbow, when we conceive a large arch in the clouds, made up of various colours parallel to each other: But it is a learned idea which a philosopher has when he considers it as the various reflections and refractions of sunbeams, in drops of falling rain. So it is a vulgar idea which we have of the colours of solid bodies, when we perceive them to be, as it were, a red, or blue, or green tincture of the surface of those bodies: But it is a philosophical idea when we consider the various colours to be nothing else but different sensations excited in us by the variously refracted rays of light, reflected on our eyes, in a different manner, according to the different size, or shape, or situation of the particles of which the surfaces of those bodies are composed. It is a vulgar idea which we have of a watch or clock, when we conceive of it as a pretty instrument, made to show us the hour of the day: But it is a learned idea which the watch-maker has of it, who knows all the several parts of it, the spring, the balance, the chain, the wheels, their axles, &c. together with the various connections and adjustments of each part, whence the exact and uniform motion of the index is derived, which points to the minute or the hour. So when a common understanding reads Virgil's Æneid, he has but a vulgar idea of that poem, yet his mind is naturally entertained with the story, and his ears with the verse: But when a critic, or a man who has skill in poesy, reads it, he has a learned idea of its peculiar beauties, he tastes and relishes a superior pleasure; he admires the Roman poet, and wishes he had known the Christian theology, which would have furnished him with nobler materials and machines than all the heathen idols.

It is with a vulgar idea that the world beholds the cartoons of Raphael at Hampton-Court, and every one feels his share of pleasure and entertainment: But a painter contemplates the wonders of that Italian pencil, and sees a thousand beauties in them, which the vulgar eye neglected: His learned ideas give him a transcendent delight, and yet, at the same time, discover the blemishes which the common gazer never observed.

III. Ideas are either perfect or imperfect, which are otherwise called adequate or inadequate.

Those are adequate ideas which perfectly represent their archetypes or objects. Inadequate ideas are but a partial, or incomplete representation of those archetypes to which they are referred.

All our simple ideas are, in some sense, adequate or perfect, because simple ideas, considered merely as our first perceptions, have no parts in them: So we may be said to have a perfect idea of white, black, sweet, sour, length, light, motion, rest, &c. We have also a perfect idea of various figures, as a triangle, a square, a cylinder, a cube, a sphere, which are complex ideas: But our idea or image of a figure of a thousand sides, our idea of the city of London, or the powers of a loadstone, are very imperfect, as well as all our ideas of infinite length or breadth, infinite power, wisdom or duration: For the idea of infinite is endless and ever growing, and can never be completed.

Note, 1. When we have a perfect idea of any thing in all its parts, it is called a complete idea; when in all its properties, it is called comprehensive. But when we have but an inadequate and imperfect idea, we are only said to apprehend it; therefore we use the term apprehension, when we speak of our knowledge of God, who can never be comprehended by his creatures.

Note, 2. Though there are a multitude of ideas which may be called perfect, or adequate, in a vulgar sense; yet there are scarce any ideas which are adequate, comprehensive, and complete in a philosophical sense: For there is scarce any thing in the world that we know, as to all the parts, and powers, and properties of it, in perfection. Even so plain an idea as that of a triangle has, perhaps, infinite properties belonging to it, of which we know but a few. Who can tell what are the shapes and positions of those particles, which cause all the variety of colours that appear on the surface of things? Who knows what are the figures of the little corpuscles that compose and distinguish different bodies? The ideas of brass, iron, gold, wood, stone, hyssop, and rosemary, have an infinite variety of hidden mysteries contained in the shape, size, motion, and position of the little particles of which they are composed; and perhaps, also, infinite unknown properties and powers, that may be derived from them. And if we arise to the animal world, or the world of spirits, our knowledge of them must be amazingly imperfect, when there is not the least grain of sand or empty space, but has too many questions and difficulties belonging to it, for the wisest philosopher upon earth to answer and resolve.

IV. Our ideas are either true or false; for an idea being the representation of a thing in the mind, it must be either a true or a false representation of it. If the idea be conformable to the object or archetype of it, it is a true idea; if not, it is a false one. Sometimes our ideas are referred to things really existing without us as their archetypes. If I see bodies in their proper colours, I have a true idea; but when a man under the jaundice sees all bodies yellow, he has a false idea of them. So if we see the sun or moon rising or setting, our idea represents them bigger than when they are on the meridian; and in this sense it is a false idea, because those heavenly bodies are all day and all night of the same bigness. Or when I see a straight staff appear crooked while it is half under the water, I say, the water gives me a false idea of it. Sometimes our ideas refer to the ideas of other men, denoted by such a particular word, as their archetypes: So when I hear a protestant use the words church and sacraments, if I understand by these words, a congregation of faithful men who profess christianity, and the two ordinances, baptism and the Lord's-supper, I have a true idea of those words in the common sense of protestants: But if the man who speaks of them be a papist, he means the church of Rome and the seven sacraments, and then I have a mistaken idea of those words, as spoken by him, for he has a different sense and meaning: And in general, whensoever I mistake the sense of any speaker or writer, I may be said to have a false idea of it.

Some think that truth or falsehood properly belongs only to propositions, which shall be the subject of discourse in the Second Part of Logic; for, if we consider ideas as mere impressions upon the mind, made by outward objects, those impressions will ever be conformable to the laws of nature in such a case: The water will make a stick appear crooked, and the horizontal air will make the sun and moon appear bigger. And gene-

rally where there is falsehood in ideas, there seems to be some secret or latent proposition, whereby we judge falsely of things: This is more obvious where we take up the words of a writer or speaker in a mistaken sense, for we join his words to our own ideas, which are different from his. But after all, since ideas are pictures of things, it can never be very improper to pronounce them to be true or false, according to their conformity or nonconformity to their exemplars.

CHAPTER IV.

OF WORDS AND THEIR SEVERAL DIVISIONS, TOGETHER WITH THE ADVANTAGE AND DANGER OF THEM.

SECTION I.

OF WORDS IN GENERAL, AND THEIR USE.

THOUGH our ideas are first acquired by the perception of objects, or by various sensations and reflections, yet we convey them to each other by the means of certain sounds, or written marks, which we call words; and a great part of our knowledge is both obtained and communicated by these means, which are called speech or language.

But as we are led into the knowledge of things by words, so we are oftentimes led into error, or mistake, by the use or abuse of words also. And in order to guard against such mistakes, as well as to promote our improvement in knowledge, it is necessary to acquaint ourselves a little with words and terms. We shall begin with these observations:—

1. Words, whether they are spoken or written, have no natural connection with the ideas they are designed to signify, nor with the things which are represented in those ideas. There is no manner of affinity between the sounds white in English, or blanc in French, and that colour which we call by that name; nor have the letters, of which these words are composed any natural aptness to signify that colour rather than red or green. Words and names therefore are mere abitrary signs invented by men to communicate their thoughts or ideas to one another.

2. If one single word were appointed to express but one simple idea, and nothing else, as white, black, sweet, sour, sharp, bitter, extension, duration, there would be scarce any mistake about them.

But, alas! it is a common unhappiness in language, that different simple ideas are sometimes expressed by the same word; so the words sweet and sharp are applied both to the objects of hearing and tasting, as we shall see hereafter; and this, perhaps, may be one cause or foundation of obscurity and error arising from words.

3. In communicating our complex ideas to one another, if we could join as many peculiar and appropriated words together in one sound, as we join simple ideas to make one complex one, we should seldom be in danger of mistaking: When I express the taste of an apple, which we call the bitter-sweet, none can mistake what I mean.

Yet this sort of composition would make all language a most tedious and unwieldy

thing, since most of our ideas are complex, and many of them have eight or ten simple ideas in them; so that the remedy would be worse than the disease; for what is now expressed in one short word, as month, or year, would require two lines to express it. It is necessary, therefore, that single words be invented to express complex ideas, in order to make language short and useful.

But here is our great infelicity, that when single words signify complex ideas, one word can never distinctly manifest all the parts of a complex idea; and thereby it will often happen, that one man includes more or less in his idea, than another does, while he affixes the same word to it. In this case there will be danger of mistake between them, for they do not mean the same object, though they use the same name. So, if one person or nation, by the word year mean twelve months of thirty days each, that is, three hundred and sixty days, another intend a solar year of three hundred and sixty-five days, and a third mean a lunar year, or twelve lunar months, that is, three hundred and fifty-four days, there will be a great variation and error in their account of things, unless they are well apprized of each other's meaning beforehand. This is supposed to be the reason, why some ancient histories and prophecies, and accounts of chronology, are so hard to be adjusted. And this is the true reason of so furious and endless debates on many points in divinity; the words church, worship, idolatry, repentance, faith, election, merit, grace, and many others which signify very complex ideas, are not applied to include just the same simple ideas, and the same number of them, by the various contending parties; thence arise confusion and contest.

4. Though a single name does not certainly manifest to us all the parts of a complex idea, yet it must be acknowledged, that in many of our complex ideas, the single name may point out to us some chief property which belongs to the thing that the word signifies; especially when the word or name is traced up to its original, through several languages from whence it is borrowed. So an apostle signifies one who is sent forth.

But this tracing of a word to its original, which is called etymology, is sometimes a very precarious and uncertain thing; and after all, we have made but little progress towards the attainment of the full meaning of a complex idea, by knowing some one chief property of it. We know but a small part of the notion of an apostle, by knowing barely that he is sent forth.

5. Many, if not most, of our words which are applied to moral and intellectual ideas, when traced up to their original in the learned languages, will be found to signify sensible and corporeal things: Thus the words apprehension, understanding, abstraction, invention, idea, inference, prudence, religion, church, adoration, &c. have all a corporeal signification in their original. The name spirit itself signifies breath or air, in Latin, Greek, and Hebrew: Such is the poverty of all languages, they are forced to use these names for incorporeal ideas, which thing has a tendency to error and confusion.

6. The last thing I shall mention that leads us into many a mistake is, the multitude of objects that one name sometimes signifies; there is almost an infinite variety of things and ideas both simple and complex, beyond all the words that are invented in any language; thence it becomes almost necessary that one name should signify several things. Let us but consider the two colours of yellow and blue, if they are mingled together in any considerable proportion, they make a green: Now there may be infinite differences

of the proportions in the mixture of yellow and blue; and yet we have only these three words, yellow, blue, and green, to signify all of them, at least by one single term.

When I use the word shore, I may intend thereby a coast of land near the sea, or a drain to carry off water, or a prop to support a building; and by the sound of the word porter, who can tell whether I mean a man who bears burdens, or a servant who waits at a nobleman's gate? The world is fruitful in the invention of utensils of life, and new characters and offices of men, yet names entirely new are seldom invented; therefore old names are almost necessarily used to signify new things, which may occasion much confusion and error in the receiving and communicating of knowledge.

Give me leave to propose one single instance, wherein all these notes shall be remarkably exemplified. It is the word bishop, which in French is called evêque; upon which I would make these several observations: 1. That there is no natural connection between the sacred office hereby signified, and the letters or sound which signify this office; for both these words evêque and bishop signify the same office, though there is not one letter alike in them; nor have the letters which compose the English or the French word any thing sacred belonging to them, more than the letters that compose the words king or soldier. 2. If the meaning of a word could be learned by its derivation or etymology, yet the original derivation of words is oftentimes very dark and unsearchable; for who would imagine that each of these words are derived from the Latin *episcopus*, or the Greek Ἐπίσκοπος? Yet in this instance we happen to know certainly the true derivation; the French being anciently written evesque, is borrowed from the first part of the Latin word; and the old English biscop from the middle of it. 3. The original Greek word signifies an overlooker, or one who stands higher than his fellows and overlooks them: It is a compound word, that primarily signifies sensible ideas, translated to signify or include several moral or intellectual ideas; therefore all will grant that the nature of the office can never be known by the mere sound or sense of the word overlooker. 4. I add, farther, the word bishop or episcopus, even when it is thus translated from a sensible idea, to include several intellectual ideas, may yet equally signify an overseer of the poor; an inspector of the customs; a surveyor of the highways; a supervisor of the excise, &c. but by the consent of men, and the language of scripture, it is appropriated to signify a sacred office of the church. 5. This very idea and name, thus translated from things sensible to signify a spiritual and sacred thing, contains but one property of it, namely, one that has an oversight or care over others; but it does not tell us whether it includes a care over one church, or many; over the laity or the clergy. 6. Thence it follows, that those who, in the complex idea of the word bishop, include an oversight over the clergy, or over a whole diocese of people, a superiority of presbyters, a distinct power of ordination, &c. must necessarily disagree with those who include in it only the care of a single congregation. Thus, according to the various opinions of men, this word signifies a pope, a gallican bishop, a lutheran superintendant, an English prelate, a pastor of a single assembly, or a presbyter or elder. Thus they quarrel with each other perpetually; and it is well if any of them all have hit precisely the sense of the sacred writers, and included just the same ideas in it, and no others.

I might make all the same remarks on the word church or kirk, which is derived from Κυριὸν οἶκος, or the house of the Lord, contracted into kyrioik, which some suppose to

signify an assembly of christians, some take it for all the world that professes christianity, and some make it to mean only the clergy; and on these accounts it has been the occasion of as many and as furious controversies as the word bishop, which was mentioned before.

SECTION II.

OF NEGATIVE AND POSITIVE TERMS.

FROM these and other considerations it will follow, that if we would avoid error in our pursuit of knowledge, we must take good heed to the use of words and terms, and be acquainted with the various kinds of them.

I. Terms are either positive or negative.

Negative terms are such as have a little word or syllable of denying joined to them, according to the various idioms of every language, as unpleasant, imprudent, immortal, irregular, ignorant, infinite, endless, lifeless, deathless, nonsense, abyss, anonymous, where the prepositions, *un*, *im*, *in*, *non*, *a*, *an*, and the termination *less*, signify a negation, either in English, Latin, or Greek.

Positive terms are those which have no such negative appendices belonging to them, as life, death, end, sense, mortal.

But so unhappily are our words and ideas linked together, that we can never know which are positive ideas, and which are negative, by the word that is used to express them, and that for these reasons:

1. There are some positive terms which are made to signify a negative idea; as dead is properly a thing that is deprived of life; blind implies a negation or privation of sight; deaf a want of hearing; dumb a denial of speech.

2. There are also some negative terms which imply positive ideas, such as, immortal and deathless, which signify ever-living, or a continuance in life; insolent signifies rude and haughty; indemnify to keep safe; and infinite perhaps has a positive idea too, for it is an idea ever growing; and when it is applied to God, it signifies his complete perfection.

3. There are both positive and negative terms, invented to signify the same, instead of contrary ideas; as unhappy and miserable, sinless and holy, pure and undefiled, impure and filthy, unkind and cruel, irreligious and profane, unforgiving and revengeful, &c. and there is a great deal of beauty and convenience derived to any language from this variety of expression; though sometimes it a little confounds our conceptions of being and not-being, our positive and negative ideas.

4. I may add also that there are some words which are negative in their original language, but seem positive to an Englishman, because the negation is unknown; as abyss, a place without a bottom; anodyne, an easing medicine; amnesty, an unremembrance, or general pardon; anarchy, a state without government; anonymous, that is, nameless; inept, that is, not fit; iniquity, that is, unrighteousness; infant, one that cannot speak, namely, a child; injurious, not doing justice or right.

The way therefore to know whether any idea be negative or not, is to consider whether it primarily imply the absence of any positive being, or mode of being; if it doth, then it is a negation or negative idea; otherwise it is a positive one, whether the word

that expresses it be positive or negative. Yet after all, in many cases, this is very hard to determine, as in amnesty, infinite, abyss, which are originally relative terms, but they signify pardon, &c. which seem to be positives. So darkness, madness, clown, are positive terms, but they imply the want of light, the want of reason, and the want of manners; and perhaps these may be ranked among the negative ideas.

Here note, that in the English tongue two negative terms are equal to one positive, and signify the same thing; as not unhappy, signifies happy; not immortal, signifies mortal; he is no imprudent man, that is, he is a man of prudence: But the sense and force of the word in such a negative way of expression seem to be a little diminished.

SECTION III.

OF SIMPLE AND COMPLEX TERMS.

II. TERMS are divided into simple or complex. A simple term is one word, a complex term is when more words are used to signify one thing.

Some terms are complex in words, but not in sense, such is the second emperor of Rome; for it excites in our mind only the idea of one man, namely, Augustus.

Some terms are complex in sense, but not in words; so when I say an army, a forest, I mean a multitude of men, or trees; and almost all our moral ideas, as well as many of our natural ones, are expressed in this manner; religion, piety, loyalty, knavery, theft, include a variety of ideas in each term.

There are other terms which are complex both in words and sense; so when I say a fierce dog, or a pious man, it excites an idea not only of those two creatures, but of their peculiar characters also.

Among the terms that are complex in sense, but not in words, we may reckon those simple terms which contain a primary and a secondary idea in them; as when I hear my neighbour speak that which is not true, and I say to him, this is not true, or this is false, I only convey to him the naked idea of his error; this is the primary idea: But if I say it is a lie, the word lie carries also a secondary idea in it, for it implies both the falsehood of the speech, and my reproach and censure of the speaker. On the other hand, if I say it is a mistake, this carries also a secondary idea with it; for it not only refers to the falsehood of his speech, but includes my tenderness and civility to him at the same time. Another instance may be this; when I use the word, incest, adultery, and murder, I convey to another not only the primary idea of those actions, but I include also the secondary idea of their unlawfulness, and my abhorrence of them.

Note, First, Hence it comes to pass, that among words which signify the same principal ideas, some are clean and decent, others unclean; some chaste, others obscene; some are kind, others are affronting and reproachful, because of the secondary idea which custom has affixed to them. And it is the part of a wise man, when there is a necessity of expressing any evil actions, to do it either by a word that has a secondary idea of kindness or softness; or a word that carries with it an idea of rebuke and severity, according as the case requires: So when there is a necessity of expressing things unclean or obscene, a wise man will do it in the most decent language, to excite as few uncleanly ideas as possible in the minds of the hearers.

Note, Secondly, In length of time, and by the power of custom, words sometimes

change their primary ideas, as shall be declared, and sometimes they have changed their secondary ideas, though the primary ideas may remain: So words that were once chaste, by frequent use grow obscene and uncleanly; and words that were once honourable may, in the next generation, grow mean and contemptible. So the word dame originally signified a mistress of a family, who was a lady, and it is used still in the English law to signify a lady; but in common use now-a-days it represents a farmer's wife, or a mistress of a family of the lower rank in the country. So those words of Rabshakeh, *Isaiah* xxxvi. 12. in our translation, Eat their own dung, &c. were doubtless decent and clean language, when our translators wrote them, above a hundred years ago. The word dung has maintained its old secondary idea and inoffensive sense to this day; but the other word in that sentence has by custom acquired a more uncleanly idea, and should now rather be changed into a more decent term, and so it should be read in public, unless it should be thought more proper to omit the sentence.*

For this reason it is that the Jewish rabbins have supplied other chaste words in the margin of the Hebrew Bible, where the words of the text, through time and custom, are degenerated, so as to carry any base and unclean secondary idea in them; and they read the word which is in the margin, which they call *keri*, and not that which was written in the text, which they called *chetib*.

SECTION IV.

OF WORDS COMMON AND PROPER.

III. WORDS and names are either common or proper. Common names are such as stand for universal ideas, or a whole rank of beings, whether general or special. These are called appellatives; so fish, bird, man, city, river, are common names; and so are trout, eel, lobster, for they all agree to many individuals, and some of them to many species: But Cicero, Virgil, Bucephalus, London, Rome, Ætna, the Thames, are proper names, for each of them agrees only to one single being.

Note here, *first*, That a proper name may become in some sense common, when it hath been given to several beings of the same kind; so Cæsar, which was the proper name of the first emperor Julius, became also a common name to all the following emperors. And tea, which was the proper name of one sort of Indian leaf, is now-a-days become a common name for many infusions of herbs, or plants, in water; as sage-tea, alehoof-tea, lemon-tea, &c. So Peter, Thomas, John, William, may be reckoned common names also, because they are given to many persons, unless they are determined to signify a single person at any particular time or place.

Note in the *second* place, That a common name may become proper by custom, or by the time, or place, or persons that use it; as in Great Britain, when we say the King, we mean our present rightful sovereign King George, who now reigns; when we speak of the Prince, we intend his Royal Highness George Prince of Wales: If we mention the city, when we are near London, we generally mean the city of London: When in a country town, we say the parson, or the esquire, all the parish knows who are the

* So in some places of the sacred historians, where it is written, Every one that pisseth against the wall, we should read, Every male.

single persons intended by it; so when we are speaking of the history of the New Testament, and use the words Peter, Paul, John, we mean those three apostles.

Note in the *third* place, That any common name whatsoever is made proper, by terms of particularity added to it, as the common words pope, king, horse, garden, book, knife, &c. are designed to signify a singular idea, when we say the present pope; the king of Great Britain; the horse that won the last plate at Newmarket; the royal garden at Kensington; this book; that knife, &c.

SECTION V.

OF CONCRETE AND ABSTRACT TERMS.

IV. WORDS or terms are divided into abstract and concrete.

Abstract terms signify the mode or quality of a being, without any regard to the subject in which it is; as whiteness, roundness, length, breadth, wisdom, mortality, life, death.

Concrete terms, while they express the quality, do also either express, or imply, or refer to some subject to which it belongs; as white, round, long, broad, wise, mortal, living, dead. But these are not always noun adjectives in a grammatical sense; for a fool, a knave, a philosopher, and many other concretes, are substantives, as well as knavery, folly, and philosophy, which are the abstract terms that belong to them.

SECTION VI.

OF UNIVOCAL AND EQUIVOCAL WORDS.

V. WORDS and terms are either univocal or equivocal. Univocal words are such as signify but one idea, or at least but one sort of thing; equivocal words are such as signify two or more different ideas, or different sorts of objects. The words book, bible, fish, house, elephant, may be called univocal words; for I know not that they signify any thing else but those ideas to which they are generally affixed; but head is an equivocal word, for it signifies the head of a nail, or of a pin, as well as of an animal: Nail is an equivocal word, it is used for the nail of the hand, or foot, and for an iron nail to fasten any thing. Post is equivocal, it is a piece of timber, or a swift messenger. A church is a religious assembly, or the large fair building where they meet; and sometimes the same word means a synod of bishops, or of presbyters, and in some places it is the pope and a general council.

Here let it be noted, that when two or more words signify the same thing, as wave and billow, mead and meadow, they are usually called synonymous words: But it seems very strange, that words, which are directly contrary to each other, should sometimes represent almost the same ideas; yet thus it is in some few instances; a valuable, or an invaluable blessing; a shameful, or a shameless villain; a thick skull, or a thin-skulled fellow, a mere paper skull; a man of a large conscience, little conscience, or no conscience; a famous rascal, or an infamous one. So uncertain a thing is human language, whose foundation and support is custom!

As words signifying the same thing are called synonymous, so equivocal words, or

those which signify several things, are called homonymous, or ambiguous; and when persons use such ambiguous words, with a design to deceive, it is called equivocation.

Our simple ideas, and especially the sensible qualities, furnish us with a great variety of equivocal or ambiguous words; for these being the first, and most natural ideas we have, we borrow some of their names, to signify many other ideas, both simple and complex. The word sweet expresses the pleasant perceptions of almost every sense; sugar is sweet, but it hath not the same sweetness as music; nor hath music the sweetness of a rose; and a sweet prospect differs from them all; nor yet have any of these the same sweetness as discourse, counsel, or meditation hath; yet the royal psalmist saith of a man, We took sweet counsel together; and of God, my meditation of him shall be sweet. Bitter is also such an equivocal word; there is bitter wormwood, there are bitter words, there are bitter enemies, and a bitter cold morning. So there is a sharpness in vinegar, and there is a sharpness in pain, in sorrow and in reproach; there is a sharp eye, a sharp wit, and a sharp sword: But there is not one of these seven sharpnesses the same as another of them, and a sharp east wind is different from them all.

There are also verbs or words of action, which are equivocal, as well as nouns or names. The words to bear, to take, to come, to get, are sufficient instances of it; as when we say, to bear a burden, to bear sorrow or reproach, to bear a name, to bear a grudge, to bear fruit, or to bear children, the word bear is used in very different senses: And so is the word get, when we say, to get money, to get in, to get off, to get ready, to get a stomach, and to get a cold, &c.

There is also a great deal of ambiguity in many of the English particles; as but, before, beside, with, without, that, then, there, for, forth, above, about, &c. of which grammars and dictionaries will sufficiently inform us.

SECTION VII.

VARIOUS KINDS OF EQUIVOCAL WORDS.

IT would be endless to run through all the varieties of words and terms, which have different senses applied to them; I shall only mention therefore a few of the most remarkable and most useful distinctions among them.

First, The first division of equivocal words let us know that some are equivocal only in their sound or pronunciation; others are equivocal only in writing, and others, both in writing and in sound.

Words equivocal in sound only, are such as these; the rein of a bridle, which hath the same sound with the reign of a king, or a shower of rain: But all three have different letters, and distinct spelling. So might, or strength, is equivocal in sound, but differs in writing from mite, a little animal, or a small piece of money. And the verb to write, has the same sound with wright a workman, right or equity, and rite or ceremony; but it is spelled very differently in them all.

Words equivocal in writing only are such as these; to tear to pieces, has the same spelling with a tear: To lead, or guide, has the same letters as lead, the metal: And a bowl for recreation, is written the same way as a bowl for drinking: But the pronunciation of all these is different.

But those words which are most commonly and justly called equivocal, are such as are both written and pronounced the same way, and yet have different senses or ideas belonging to them; such are all the instances which were given in the preceding Section.

Among the words which are equivocal in sound only, and not in writing, there is a large field for persons who delight in jests and puns, in riddles and quibbles, to sport themselves. This sort of words is also used by wanton persons to convey lewd ideas, under the covert of expressions capable of a chaste meaning, which are called *double entendres;* or when persons speak falsehood with a design to deceive, under the covert of truth. Though it must be confessed, that all sorts of equivocal words yield sufficient matter for such purposes.

There are many cases also, wherein an equivocal word is used, for the sake of decency, to cover a foul idea: For the most chaste and modest, and well-bred persons, having sometimes a necessity to speak of the things of nature, convey their ideas in the most inoffensive language by this means. And indeed, the mere poverty of all languages makes it necessary to use equivocal words upon many occasions, as the common writings of men, and even the holy book of God, sufficiently manifest.

Secondly. Equivocal words are usually distinguished, according to their original, into such whose various senses arise from mere chance or accident, and such as are made equivocal by design; as the word bear signifies a shaggy beast, and it signifies also to bear or carry a burden; this seems to be the mere effect of chance: But if I call my dog, bear, because he is shaggy, or call one of the northern constellations by that name, from a fancied situation of the stars in the shape of that animal, then it is by design that the word is made yet further equivocal.

But because I think this common account of the spring or origin of equivocal words is too slight and imperfect, I shall reserve this subject to be treated of by itself, and proceed to the third division.

Thirdly. Ambiguous, or equivocal words, are such as are sometimes taken in a large and general sense, and sometimes in a sense more strict and limited, and have different ideas affixed to them accordingly. Religion, or virtue, taken in a large sense, includes both our duty to God and our neighbour; but in a more strict, limited and proper sense, virtue signifies our duty towards men, and religion our duty to God. Virtue may yet be taken in the strictest sense, and then it signifies power or courage, which is the sense of it in some places of the New Testament. So grace, taken in a large sense, means the favour of God, and all the spiritual blessings that proceed from it, which is a frequent sense of it in the Bible; but in a limited sense it signifies the habit of holiness wrought in us by divine favour, or a complex idea of the christian virtues. It may also be taken in the strictest sense; and thus it signifies any single christian virtue, as in 2 *Cor.* viii. 6, 7. where it is used for liberality. So a city, in a strict and proper sense, means the houses inclosed within the walls; in a larger sense, it reaches to all the suburbs.

This larger and stricter sense of a word is used in almost all the sciences, as well as in theology, and in common life. The word geography, taken in a strict sense, signifies the knowledge of the circles of the earthly globe, and the situation of the various parts of the earth; when it is taken in a little larger sense, it includes the knowledge of the seas also; and in the largest sense of all, it extends to the various customs, habits, and governments of nations. When an astronomer uses the word star in its proper and

strict sense, it is applied only to the fixed stars, but in a large sense it includes the planets also.

This equivocal sense of words belongs also to many proper names: So Asia, taken in the largest sense, is one quarter of the world; in a more limited sense it signifies Natolia, or the Lesser Asia; but in the strictest sense it means no more than one little province of Natolia, where stood the cities of Ephesus, Smyrna, Sardis, &c. And this is the most frequent sense of it in the New Testament. Flanders and Holland, in a strict sense, are but two single provinces among the seventeen, but in a large sense Holland includes seven of them, and Flanders ten.

There are also some very common and little words in all languages, that are used in a more extensive, or more limited sense; such as all, every, whatsoever, &c. When the apostle says, all men have sinned, and all men must die, all is taken in its most universal and extensive sense, including all mankind; *Rom.* v. 12. When he appoints prayer to be made for all men, it appears by the following verses, that he restrains the word all to signify chiefly all ranks and degrees of men; 1 *Tim.* ii. 1. But when St. Paul says, I please all men in all things, 1 *Cor.* x. 33. the word all is exceedingly limited, for it reaches no farther than that he pleased all those men whom he conversed with, in all things that were lawful.

Fourthly. Equivocal words are, in the fourth place, distinguished by their literal or figurative sense. Words are used in a proper or literal sense, when they are designed to signify those ideas for which they were originally made, or to which they are primarily and generally annexed; but they are used in a figurative or tropical sense, when they are made to signify some things, which only bear either a reference or a resemblance to the primary ideas of them. So when two princes contend by their armies, we say they are at war, in a proper sense; but when we say there is a war betwixt the winds and the waves in a storm, this is called figurative, and the peculiar figure is a metaphor. So when the scripture says, riches make themselves wings, and fly away as an eagle toward heaven, the wings and the flight of the eagle are proper expressions; but when flight and wings are applied to riches, it is only by way of figure and metaphor. So when a man is said to repent, or laugh, or grieve, it is literally taken; but when God is said to be grieved, to repent, or laugh, &c. these are all figurative expressions borrowed from a resemblance to mankind. And when the words Job or Esther are used to signify those very persons, it is the literal sense of them; but when they signify those two books of scripture, this is a figurative sense. The names of Horace, Juvenal, and Milton, are used in the same manner, either for books or men.

When a word, which originally signifies any particular idea or object, is attributed to several other objects, not so much by way of resemblance, but rather on the account of some evident reference or relation to the original idea, this is sometimes peculiarly called an analogical word; so a sound or healthy pulse; a sound digestion; sound sleep; are all so called with reference to a sound and healthy constitution: But if you speak of sound doctrine or sound speech, this is by way of resemblance to health, and the words are metaphorical: Yet many times analogy and metaphor are used promiscuously in the same sense, and not distinguished.

Here note, That the design of metaphorical language, and figures of speech, is not merely to represent our ideas, but to represent them with vivacity, spirit, affection, and power; and though they often make a deeper impression on the mind of the hearer, yet

they do as often lead him into a mistake, if they are used at improper times and places. Therefore, where the design of the speaker or writer is merely to explain, to instruct, and to lead into the knowledge of naked truth, he ought, for the most part, to use plain and proper words, if the language affords them, and not to deal much in figurative speech. But this sort of terms is used very profitably by poets and orators, whose business is to move, and persuade, and work on the passions, as well as on the understanding. Figures are also happily employed in proverbial moral sayings by the wisest and the best of men, to impress them deeper on the memory by sensible images; and they are often used for other valuable purposes in the sacred writings.

5thly. I might adjoin another sort of equivocal words; as there are some which have a different meaning in common language, from what they have in the sciences; the word passion signifies the receiving any action, in a large philosophical sense; in a more limited philosophical sense, it signifies any of the affections of human nature, as love, fear, joy, sorrow, &c. But the common people confine it only to anger: So the word simple, philosophically, signifies single; but vulgarly it is used for foolish.

6thly, Other equivocal words are used sometimes in an absolute sense, as when God is called perfect, which allows of no defect; and sometimes in a comparative sense, as good men are oftentimes called perfect in scripture, in comparison of those who are much inferior to them in knowledge or holiness: But I have dwelt rather too long upon this subject already, therefore I add no more.

SECTION VIII.

THE ORIGIN OR CAUSES OF EQUIVOCAL WORDS.

Now, that we may become more skilful in guarding ourselves and others against the danger of mistakes which may arise from equivocal words, it may not be amiss to conclude this chapter with a short account of the various ways or means whereby a word changes its signification, or acquires any new sense, and thus becomes equivocal, especially if it keeps its old sense also.

1. Mere chance sometimes gives the same word different senses; as the word light signifies a body that is not heavy; and it also signifies the effect of sun-beams, or the medium whereby we see objects: This is merely accidental, for there seems to be no connection between these two senses, nor any reason for them.

2. Error and mistake is another occasion of giving various senses to the same word; as when different persons read the names of priest, bishop, church, easter, &c. in the New Testament, they affix different ideas to them, for want of acquaintance with the true meaning of the sacred writer; though it must be confessed, these various senses, which might arise at first from honest mistake, may be culpably supported and propagated by interest, ambition, prejudice, and a party-spirit on any side.

3. Time and custom alter the meaning of words. Knave heretofore signified a diligent servant, *gnavus;* and a villain was an under tenant to the lord of the manor, *villicus;* but now both these words carry an idea of wickedness and reproach with them. A ballad once signified a solemn and sacred song, as well as one that is trivial, when Solomon's Song was called the ballad of ballads; but now it is applied to nothing but trifling verse, or comical subjects.

4. Words change their sense by figures and metaphors, which are derived from some real analogy or resemblance between several things; as when wings and flight are applied to riches, it signifies only that the owner may as easily lose them, as he would lose a bird who flew away with wings.

And I think, under this head, we may rank those words, which signify different ideas, by a sort of an unaccountable far-fetched analogy, or distant resemblance, that fancy has introduced between one thing and another; as when we say, the meat is green, when it is half-roasted: We speak of airing linen by the fire, when we mean drying or warming it: We call for round coals for the chimney, when we mean large square ones: And we talk of the wing of a rabbit, when we mean the fore-leg: The true reason of these appellations we leave to the critics.

5. Words also change their sense by the special occasion of using them, the peculiar manner of pronunciation, the sound of the voice, the motion of the face, or gestures of the body; so when an angry master says to his servant, It is bravely done! or, You are a fine gentleman! he means just the contrary; namely, It is very ill done; You are a sorry fellow: It is one way of giving a severe reproach, for the words are spoken by way of sarcasm, or irony.

6. Words are applied to various senses, by new ideas appearing or arising faster than new words are framed. So when gunpowder was found out, the word powder, which before signified only dust, was made then to signify that mixture or composition of nitre, charcoal, &c. And the name canon, which before signified a law or a rule, is now also given to a great gun, which gives laws to nations. So foot-boys, who had frequently the common name of Jack given them, were kept to turn the spit, or to pull off their master's boots; but when instruments were invented for both those services, they were both called jacks, though one was of iron, the other of wood, and very different in their form.

7. Words alter their significations according to the ideas of the various persons, sects, or parties, who use them, as we have hinted before; so when a papist uses the word heretics, he generally means the protestants; when a protestant uses the word, he means any persons who were wilfully, and perhaps contentiously, obstinate in fundamental errors. When a Jew speaks of the true religion, he means the institutions of Moses; when a Turk mentions it, he intends the doctrine of Mahomet; but when a Christian makes use of it, he designs to signify christianity, or the truths and precepts of the gospel.

8. Words have different significations according to the book, writing, or discourse in which they stand. So in a treatise of anatomy, a foot signifies that member in the body of man: But in a book of geometry or mensuration, it signifies twelve inches.

If I had room to exemplify most of these particulars in one single word, I know not where to choose a fitter than the word sound, which seems, as it were by chance, to signify three distinct ideas, namely, healthy, from *sanus*, as a sound body; noise, from *sonus*, as a shrill sound; and to sound the sea, perhaps from the French *sonde*, a probe, or an instrument to find the depth of water. From these three, which I may call original senses, various derivative senses arise; as sound sleep, sound lungs, sound wind and limb, a sound heart, a sound mind, sound doctrine, a sound divine, sound reason, a sound cask, sound timber, a sound reproof, to beat one soundly, to sound one's meaning or inclination, and a sound or narrow sea; turn these all into Latin, and the variety will appear plain.

I confess, some few of these which I have mentioned as the different springs of equivocal words, may be reduced in some cases to the same original: But it must also be granted, that there may be other ways besides these whereby a word comes to extend its signification, to include various ideas, and become equivocal. And though it is the business of a grammarian to pursue these remarks with more variety and particularity, yet it is also the work of a logician to give notice of these things, lest darkness, confusion, and perplexity, be brought into our conceptions by the means of words, and thence our judgments and reasonings become erroneous.

CHAPTER V.

GENERAL DIRECTIONS RELATING TO OUR IDEAS.

DIRECTION I.

FURNISH yourselves with a rich variety of ideas; acquaint yourselves with things ancient and modern; things natural, civil and religious; things domestic and national; things of your native land, and of foreign countries; things present, past, and future; and above all, be well acquainted with God and yourselves; learn animal nature, and the workings of your own spirits.

Such a general acquaintance with things will be of very great advantage.

The first benefit of it is this; it will assist the use of reason in all its following operations; it will teach you to judge of things aright, to argue justly, and to methodise your thoughts with accuracy. When you shall find several things akin to each other, and several different from each other, agreeing in some part of their idea, and disagreeing in other parts, you will range your ideas in better order, you will be more easily led into a distinct knowledge of things, and will obtain a rich store of proper thoughts and arguments upon all occasions.

You will tell me, perhaps, that you design the study of the law or divinity; and what good can natural philosophy or mathematics do you, or any other science, not directly subordinate to your chief design? But let it be considered, that all sciences have a sort of mutual connection; and knowledge of all kinds fits the mind to reason and judge better concerning any particular subject. I have known a judge upon the bench betray his ignorance, and appear a little confused in his sentiments, about a case of suspected murder brought before him, for want of some acquaintance with animal nature and philosophy.

Another benefit of it is this; such a large and general acquaintance with things will secure you from perpetual admirations and surprises, and guard you against that weakness of ignorant persons, who have never seen any thing beyond the confines of their own dwelling, and therefore they wonder at almost every thing they see; every thing beyond the smoke of their own chimney, and the reach of their own windows, is new and strange to them.

A third benefit of such an universal acquaintance with things, is this; it will keep you from being too positive and dogmatical, from an excess of credulity and unbelief, that is, a readiness to believe, or to deny every thing at first hearing; when you shall

have often seen, that strange and uncommon things, which often seemed incredible, are found to be true; and things very commonly received as true, have been found to be false.

The way of attaining such an extensive treasure of ideas, is, with diligence to apply yourself to read the best books; converse with the most knowing and wisest of men; and endeavour to improve by every person in whose company you are; suffer no hour to pass away in a lazy idleness, an impertinent chattering or useless trifles; visit other cities and countries when you have seen your own, under the care of one who can teach you to profit by travelling, and to make wise observations; indulge a just curiosity in seeing the wonders of art and nature; search into things yourself, as well as learn them from others; be acquainted with men as well as books; learn all things as much as you can at first hand; and let as many of your ideas as possible be the representations of things, and not merely the representations of other men's ideas: Thus your soul, like some noble building, shall be richly furnished with original paintings, and not with mere copies.

Direction II. Use the most proper methods to retain that treasure of ideas which you have acquired; for the mind is ready to let many of them slip, unless some pains and labour be taken to fix them upon the memory.

And more especially let those ideas be laid up and preserved with the greatest care, which are most directly suited, either to your eternal welfare, as a christian, or to your particular station and profession in this life; for though the former rule recommends an universal acquaintance with things, yet it is but a more general and superficial knowledge that is required or expected of any man, in things which are utterly foreign to his own business: But it is necessary you should have a more particular and accurate acquaintance with those things that refer to your peculiar province and duty in this life, or your happiness in another.

There are some persons who never arrive at any deep, solid, or valuable knowledge in any science, or any business in life, because they are perpetually fluttering over the surface of things, in a curious and wandering search of infinite variety; ever hearing, reading, or asking after something new, but impatient of any labour to lay up and preserve the ideas they have gained: Their souls may be compared to a looking-glass, that wheresoever you turn it, it receives the images of all objects, but retains none.

In order to preserve your treasure of ideas, and the knowledge you have gained, pursue the following advices, especially in your younger years:

1. Recollect every day the things you have seen, or heard, or read, which may have made any addition to your understanding: Read the writings of God and men with diligence and perpetual reviews: Be not fond of hastening to a new book, or a new chapter, till you have well fixed and established in your mind what was useful in the last: Make use of your memory in this manner, and you will sensibly experience a gradual improvement of it, while you take care not to load it to excess.

2. Talk over the things which you have seen, heard, or learned, with some proper acquaintance. This will make a fresh impression upon your memory; and if you have no fellow-student at hand, none of equal rank with yourself, tell it over to any of your acquaintance, where you can do it with propriety and decency; and whether they learn any thing by it or no, your own repetition of it will be an improvement to yourself:

And this practice also will furnish you with a variety of words, and copious language to express your thoughts upon all occasions.

3. Commit to writing some of the most considerable improvements which you daily make, at least such hints as may recal them again to your mind, when perhaps they are vanished and lost. And here I think Mr. Locke's method of adversaria, or common-places, which he describes in the end of the first volume of his Posthumous Works, is the best; using no learned method at all, setting down things as they occur, leaving a distinct page for each subject, and making an index to the pages.

At the end of every week, or month, or year, you may review your remarks for these reasons: First, to judge of your own improvement; when you shall find that many of your younger collections are either weak and trifling; or if they are just and proper, yet they are grown now so familiar to you, that you will thereby see your own advancement in knowledge. And in the next place, what remarks you find there worthy of your riper observation, you may note them with a marginal star, instead of transcribing them, as being worthy of your second year's review, when the others are neglected.*

To shorten something of this labour, if the books which you read are your own, mark with a pen or pencil the most considerable things in them which you desire to remember. Thus you may read that book the second time over with half the trouble, by your eye running over the paragraphs which your pencil has noted. It is but a very weak objection against this practice to say, I shall spoil my book; for I persuade myself, that you did not buy it as a bookseller to sell it again for gain, but as a scholar, to improve your mind by it; and if the mind be improved, your advantage is abundant, though your book yields less money to your executors.

Direction III. As you proceed both in learning and in life, make a wise observation what are the ideas, what the discourses and the parts of knowledge that have been more or less useful to yourself or others. In our younger years, while we are furnishing our minds with a treasure of ideas, our experience is but small, and our judgment weak; it is therefore impossible at that age to determine aright concerning the real advantage and usefulness of many things we learn. But when age and experience have matured your judgment, then you will gradually drop the more useless part of your younger furniture, and be more solicitous to retain that which is most necessary for your welfare in this life, or a better. Hereby you will come to make the same complaint that almost every learned man has done after long experience in study, and in the affairs of human life and religion: Alas! how many hours, and days, and months, have I lost in pursuing some parts of learning, and in reading some authors, which have turned to no other account, but to inform me that they were not worth my labour and pursuit! Happy the man who has a wise tutor to conduct him through all the sciences in the first years of his study; and who has a prudent friend always at hand to point out to him, from experience, how much of every science is worth his pursuit! And happy the student that is so wise as to follow such advice.

Direction IV. Learn to acquire a government over your ideas and your thoughts,

* *Note*, This advice of writing, marking, and reviewing your marks, refers chiefly to those occasional notions you meet with either in reading or in conversation; but when you are directly and professedly pursuing any subject of knowledge in a good system in your younger years, the system itself is your common-place-book, and must be entirely reviewed. The same may be said concerning any treatise which closely, succinctly, and accurately handles any particular theme.

that they may come when they are called, and depart when they are bidden. There are some thoughts that rise and intrude upon us while we shun them; there are others that fly from us, when we would hold and fix them.

If the ideas which you would willingly make the matter of your present meditation are ready to fly from you, you must be obstinate in the pursuit of them by an habit of fixed meditation; you must keep your soul to the work, when it is ready to start aside every moment, unless you will abandon yourself to be a slave to every wild imagination. It is a common, but it is an unhappy and a shameful thing, that every trifle that comes across the senses or fancy should divert us, that a buzzing fly should teize our spirits and scatter our best ideas: But we must learn to be deaf to, and regardless of other things, besides that which we make the present subject of our meditation: And in order to help a wandering and fickle humour, it is useful to have a book or paper in our hands, which has some proper hints of the subject that we design to pursue. We must be resolute and laborious, and sometimes conflict with ourselves, if we would be wise and learned.

Yet I would not be too severe in this rule: It must be confessed there are seasons when the mind, or rather the brain, is over-tired or jaded with study or thinking; or upon some other accounts animal nature may be languid or cloudy, and unfit to assist the spirit in meditation; at such seasons, provided that they return not too often, it is better sometimes to yield to the present indisposition: For if nature entirely resist, nothing can be done to the purpose, at least in that subject or science. Then you may think it proper to give yourself up to some hours of leisure and recreation, or useful idleness: Or if not, then turn your thoughts to some other alluring subject, and pore no longer upon the first, till some brighter or more favourable moments arise. A student shall do more in one hour, when all things concur to invite him to any special study, than in four hours, at a dull and improper season.

I would also give the same advice, if some vain, or worthless, or foolish idea, will crowd itself into your thoughts; and if you find that all your labour and wrestling cannot defend yourself from it, then divert the importunity of that which offends you by turning your thoughts to some entertaining subject, that may amuse a little, and draw you off from the troublesome and imposing guest; and many a time also in such a case, when the impertinent and intruding ideas would divert from present duty, devotion and prayer have been very successful to overcome such obstinate troublers of the peace and profit of the soul.

If the natural genius and temper be too volatile, fickle, and wandering, such persons ought in a more especial manner to apply themselves to mathematical learning, and to begin their studies with arithmetic and geometry; wherein new truths continually arising to the mind, out of the plainest and easiest principles, will allure the thoughts with incredible pleasure in the pursuit: This will give the student such a delightful taste of reasoning, as will fix his attention to the single subject which he pursues, and by degrees will cure the habitual levity of his spirit: But let him not indulge and pursue these so far, as to neglect the prime studies of his designed profession.

CHAPTER VI.

SPECIAL RULES TO DIRECT OUR CONCEPTIONS OF THINGS.

A GREAT part of what has been already written is designed to lay a foundation for those rules which may guide and regulate our conceptions of things; this is our main business and design in the First Part of Logick. Now if we can but direct our thoughts to a just and happy manner in forming our ideas of things, the other operations of the mind will not so easily be perverted; because most of our errors in judgment, and the weakness, fallacy and mistakes of our argumentation, proceed from the darkness, confusion, defect, or some other irregularity in our conceptions.

The rules to assist and direct our conceptions are these:

1. Conceive of things clearly and distinctly in their own natures.
2. Conceive of things completely in all their parts.
3. Conceive of things comprehensively in all their properties and relations
4. Conceive of things extensively in all their kinds.
5. Conceive of things orderly, or in a proper method.

SECTION I.

OF GAINING CLEAR AND DISTINCT IDEAS.

THE first rule is this, Seek after a clear and distinct conception of things as they are in their own nature, and do not content yourselves with obscure and confused ideas, where clearer are to be attained.

There are some things indeed whereof distinct ideas are scarce attainable, they seem to surpass the capacity of the understanding in our present state; such are the notions of eternal, immense, infinite, whether this infinity be applied to number, as an infinite multitude; to quantity, as infinite length, or breadth; to powers and perfections, as strength, wisdom, or goodness infinite, &c. Though mathematicians in their way demonstrate several things in the doctrine of infinites, yet there are still some insolvable difficulties that attend the ideas of infinity, when it is applied to mind or body; and while it is in reality but an idea ever growing, we cannot have so clear and distinct a conception of it as to secure us from mistakes in some of our reasonings about it.

There are many other things that belong to the material world, wherein the sharpest philosophers have never yet arrived at clear and distinct ideas; such as the particular shape, situation, contexture and motion of the small particles of minerals, metals, plants, &c. whereby their very natures and essences are distinguished from each other. Nor have we either senses or instruments sufficiently nice and accurate to find them out. There are other things in the world of spirits wherein our ideas are very dark and confused, such as their union with animal nature, the way of their acting on material beings, and their converse with each other. And though it is a laudable ambition to search what may be known of these matters, yet it is a vast hindrance to the enrichment of our understandings if we spend too much of our time and pains among infinites

and unsearchables, and those things for the investigation whereof we are not furnished with proper faculties in the present state. It is therefore of great service to the true improvement of the mind, to distinguish well between knowables and unknowables.

As far as things are knowable by us, it is of excellent use to accustom ourselves to clear and distinct ideas. Now among many other occasions of the darkness and mistakes of our minds, there are these two things which most remarkably bring confusion into our ideas.

1. That from our infancy we have had the ideas of things so far connected with the ideas of words, that we often mistake words for things, we mingle and confound one with the other.

2. From our youngest years we have been ever ready to consider things not so much in their own natures, as in their various respects to ourselves, and chiefly to our senses; and we have also joined and mingled the ideas of some things, with many other ideas, to which they were not akin in their own natures.

In order therefore to a clear and distinct knowledge of things, we must unclothe them of all these relations and mixtures, that we may contemplate them naked, and in their own natures, and distinguish the subject that we have in view from all other subjects whatsoever: Now to perform this well, we must here consider the definition of words, and the definition of things.

SECTION II.

OF THE DEFINITION OF WORDS OR NAMES.

IF we could conceive of things as angels and unbodied spirits do, without involving them in those clouds which words and language throw upon them, we should seldom be in danger of such mistakes as are perpetually committed by us in the present state; and indeed it would be of unknown advantage to us to accustom ourselves to form ideas of things without words, that we might know them in their own proper natures. But since we must use words, both to learn and to communicate most of our notions, we should do it with just rules of caution. I have already declared in part, how often and by what means our words become the occasion of errors in our conceptions of things. To remedy such inconveniencies, we must get an exact definition of the words we make use of, that is, we must determine precisely the sense of our words, which is called the definition of the name.

Now a definition of the name being only a declaration in what sense the word is used, or what idea or object we mean by it, this may be expressed by any one or more of the properties, effects or circumstances of that object which do sufficiently distinguish it from other objects: As if I were to tell what I mean by the word air, I may say, it is that thin matter which we breathe in and breathe out continually; or it is that fluid body in which the birds fly a little above the earth; or it is that invisible matter which fills all places near the earth, or which immediately encompasses the globe of earth and water. So if I would tell what I mean by light, I would say it is that medium whereby we see the colours and shapes of things; or it is that which distinguishes the day from the night. If I were asked what I mean by religion, I would answer, it is a collection of all our duties to God, if taken in a strict and limited sense; but if taken in a

large sense, it is a collection of all our duties both to God and man. These are called the definitions of the name.

Note, In defining the name there is no necessity that we should be acquainted with the intimate essence or nature of the thing; for any manner of description that will but sufficiently acquaint another person what we mean by such a word, is a sufficient definition for the name. And on this account, a synonymous word, or a mere negation of the contrary, a translation of the word into another tongue, or a grammatical explication of it, is sometimes sufficient for this purpose; as if one would know what I mean by a sphere, I tell him it is a globe; if he ask what is a triangle, it is that which has three angles; or an oval is that which has the shape of an egg. Dark is that which has no light: Asthma is a difficulty of breathing; a diaphoretick medicine, or a sudorifick, is something that will provoke sweating; and an insolvent, is a man that cannot pay his debts.

Since it is the design of logick, not only to assist us in learning but in teaching also, it is necessary that we should be furnished with some particular directions relating to the definition of names, both in teaching and learning.

SECTION III.

DIRECTIONS CONCERNING THE DEFINITION OF NAMES.

Direction I. Have a care of making use of mere words, instead of ideas, that is, such words as have no meaning, no definition belonging to them: Do not always imagine that there are ideas wheresoever there are names: For though mankind hath so many millions of ideas, more than they have names, yet so foolish and lavish are we, that too often we use some words in mere waste, and have no ideas for them; or at least, our ideas are so exceedingly shattered and confused, broken and blended, various and unsettled, that they can signify nothing toward the improvement of the understanding. You will find a great deal of reason for this remark, if you read the popish schoolmen; or the mystick divines.

Never rest satisfied therefore with mere words which have no ideas belonging to them, or at least no settled and determinate ideas. Deal not in such empty ware, whether you are a learner or a teacher; for hereby some persons have made themselves rich in words, and learned in their own esteem; whereas in reality their understandings have been poor, and they knew nothing.

Let me give, for instance, some of those writers or talkers who deal much in the words nature, fate, luck, chance, perfection, power, life, fortune, instinct, &c. and that even in the most calm and instructive parts of their discourse; though neither they themselves nor their hearers have any settled meaning under those words; and thus they build up their reasonings, and infer what they please, with an ambition of the name of learning, or of sublime elevations in religion; whereas in truth, they do but amuse themselves and their admirers with swelling words of vanity, understanding neither what they say, nor whereof they affirm. But this sort of talk was reproved of old by the two chief apostles, St. Peter and St. Paul; 1 *Tim.* i. 7. and 2 *Peter* ii. 18.

When pretenders to philosophy or good sense grow fond of this sort of learning, they dazzle and confound their weaker hearers, but fall under the neglect of the wise. The

Epicureans are guilty of this fault, when they ascribe the formation of the world to chance: The Aristotelians, when they say nature abhors a vacuum: The Stoics, when they talk of fate, which is superior to the gods: And the gamesters, when they curse their ill-luck, or hope for the favours of fortune. Whereas, if they would tell us, that by the word nature they mean the properties of any being, or the order of things established at the creation; that by the word fate, they intend the decrees of God, or the necessary connection and influence of second causes and effects; if by the word luck or chance they signify the absolute negation of any determinate cause, or only their ignorance of any such cause, we should know how to converse with them, and to assent to, or dissent from their opinions. But while they flutter in the dark, and make a noise with words which have no fixed ideas, they talk to the wind, and can never profit.

I would make this matter a little plainer still by instances borrowed from the Peripatetick Philosophy, which was once taught in all the schools. The professor fancies he has assigned the true reason, why all heavy bodies tend downward, why amber will draw feathers or straws, and the loadstone draw iron, when he tells you, that this is done by certain gravitating and attractive qualities, which proceed from the substantial forms of those various bodies. He imagines that he has explained why the loadstone's* north pole shall repel the north end of a magnetick needle and attract the south, when he affirms that this is done by its sympathy with one end of it, and its antipathy against the other end. Whereas in truth, all these names of sympathy, antipathy, substantial forms and qualities, when they are put for the causes of these effects in bodies, are but hard words, which only express a learned and pompous ignorance of the true cause of natural appearances; and in this sense they are mere words without ideas.

This will evidently appear, if one ask me, Why a concave mirror or convex glass will burn wood in the sun-beams, or why a wedge will cleave it? and I should tell him, it is by an ustorious quality in the mirror or glass, and by a cleaving power in the wedge, arising from a certain unknown substantial form in them, whence they derive these qualities; or if he should ask me, Why a clock strikes, and points to the hour? and I should say, it is by an indicating form and sonorifick quality; whereas I ought to tell him how the sun-beams are collected and united by a burning glass; whence the mechanical force of a wedge is derived; and what are the wheels and springs, the pointer, and hammer, and bell, whereby a clock gives notice of the time, both to the eye and the ear. But these ustorious and cleaving powers, sonorous and indicating forms and qualities, do either teach the inquirer nothing at all but what he knew before, or they are mere words without ideas.†

And there is many a man in the vulgar and in the learned world, who imagines himself deeply skilled in the controversies of divinity, whereas he has only furnished

* *Note*, Some writers call that the south pole of a loadstone which attracts the south end of the needle; but I choose to follow those who call it the north pole.

† It may be objected here, "And what does the modern philosopher, with all his detail of mathematical numbers and diagrams, do more than this toward the solution of these difficulties? Does he not describe gravity by a certain unknown force, whereby bodies tend downward to the centre? Hath he found the certain and mechanical reasons of attraction, magnetism, &c." I answer, That the moderns have found a thousand things by applying mathematics to natural philosophy, which the ancients were ignorant of; and when they use any names of this kind, *viz.* gravitation, attraction, &c. they use them only to signify, that there are such effects and such causes, with a frequent confession of their ignorance of the true springs of them: They do not pretend to make these words stand for the real causes of things, as though they thereby assigned the true philosophical solution of these difficulties; for in this sense they will still be words without ideas, whether in the mouth of an old philosopher or a new one.

himself with a parcel of scholastic or mystic words, under some of which the authors themselves had no just ideas; and the learner when he hears, or pronounces them, hath scarce any ideas at all. Such sort of words sometimes have become matters of immortal contention, as though the gospel could not stand without them; and yet the zealot perhaps knows little more of them than he does of Shibboleth, or Higgaion, Selah. *Judges* xii. 6. *Psalm* ix. 16.

Yet here I would lay down this caution, that there are several objects of which we have not a clear and distinct idea, much less an adequate or comprehensive one, and yet we cannot call the names of these things, words without ideas; such are the infinity and eternity of God himself, the union of our own soul and body, the union of the divine and human natures in Jesus Christ, the operation of the Holy Spirit on the mind of man, &c. These ought not to be called words without ideas, for there is sufficient evidence for the reality and certainty of the existence of their objects; though there is some confusion in our clearest conceptions of them; and our ideas of them, though imperfect, are yet sufficient to converse about them, so far as we have need, and to determine so much as is necessary for our own faith and practice.

Direction II. Do not suppose that the natures or essences of things always differ from one another, as much as their names do. There are various purposes in human life, for which we put very different names on the same thing, or on things whose natures are near akin; and thereby oftentimes, by making a new nominal species, we are ready to deceive ourselves with the idea of another real species of beings: And those, whose understandings are led away by the mere sound of words, fancy the nature of those things to be very different whose names are so, and judge of them accordingly.

I may borrow a remarkable instance for my purpose almost out of every garden, which contains a variety of plants in it. Most or all plants agree in this, that they have a root, a stalk, leaves, buds, blossoms and seeds: But the gardener ranges them under very different names, as though they were really different kinds of beings, merely because of the different use and service to which they are applied by men: As for instance, those plants whose roots are eaten, shall appropriate the name of roots to themselves; such are carrots, turnips, radishes, &c. If the leaves are of chief use to us, then we call them herbs; as sage, mint, thyme: If the leaves are eaten raw, they are termed sallad; as lettuce, purslain: If boiled, they become pot-herbs; as spinage, coleworts; and some of those same plants, which are pot-herbs in one family, are sallad in another. If the buds are made our food, they are called heads, or tops; so cabbage heads, heads of asparagus and artichokes. If the blossom be of most importance, we call it a flower; such are daisies, tulips, and carnations, which are the mere blossoms of those plants. If the husk or seeds are eaten, they are called the fruits of the ground, as peas, beans, strawberries, &c. If any part of the plant be of known and common use to us in medicine, we call it a physical herb, as carduus, scurvy-grass; but if we count no part useful, we call it a weed, and throw it out of the garden; and yet perhaps our next neighbour knows some valuable property and use of it; he plants it in his garden, and gives it the title of an herb or a flower. You see here how small is the real distinction of these several plants, considered in their general nature as the lesser vegetables: Yet what very different ideas we vulgarly form concerning them, and make different species of them, chiefly because of the different names given them.

Now when things are set in this clear light, it appears how ridiculous it would be for

two persons to contend, whether dandelion be an herb or a weed; whether it be a pot-herb or sallad; when by the custom or fancy of different families, this one plant obtains all these names according to the several uses of it, and the value that is put upon it.

Note here, That I find no manner of fault with the variety of names which are given to several plants, according to the various uses we make of them. But I would not have our judgments imposed upon hereby, to think that these mere nominal species, viz. herbs, sallad, and weeds, become three really different species of beings, on this account, that they have different names and uses. But I proceed to other instances.

It has been the custom of mankind, when they have been angry with any thing, to add a new ill name to it, that they may convey thereby a hateful idea of it, though the nature of the thing still abides the same. So the papists call the protestants, heretics: A profane person calls a man of piety, a precisian: And in the times of the civil war, in the last century, the royalists called the parliamentarians, fanatics, roundheads, and sectaries. And they in requital called the royalists, malignants: But the partizans on each side were really neither better nor worse for these names.

It has also been a frequent practice, on the other hand, to put new favourable names upon ill ideas, on purpose to take off the odium of them. But notwithstanding all these flattering names and titles, a man of profuse generosity is but a spendthrift; a natural son is a bastard still; a gallant is an adulterer; and a lady of pleasure is a whore.

Direction III. Take heed of believing the nature and essence of two or more things to be certainly the same, because they may have the same name given them. This has been an unhappy and fatal occasion of a thousand mistakes in the natural, in the civil, and in the religious affairs of life, both amongst the vulgar and the learned. I shall give two or three instances, chiefly in the matters of natural philosophy, having hinted several dangers of this kind relating to theology, in the foregoing discourse concerning equivocal words.

Our elder philosophers have generally made use of the word soul to signify that principle whereby a plant grows, and they called it the vegetative soul: The principle of the animal motion of a brute has been likewise called a soul, and we have been taught to name it the sensitive soul: They have also given the name soul to that superior principle in man, whereby he thinks, judges, reasons, &c. and though they distinguished this by the honourable title of the rational soul, yet in common discourse and writing we leave out the words vegetative, sensitive, and rational; and make the word soul serve for all these principles: Thence we are led early into this imagination, that there is a sort of spiritual being in plants and in brutes, like that in men. Whereas if we did but abstract and separate these things from words, and compare the cause of growth in a plant, with the cause of reasoning in man, without the word soul, we should never think that these two principles were at all like one another; nor should we perhaps so easily and peremptorily conclude, that brutes need an intelligent mind to perform their animal actions.

Another instance may be the word life, which being attributed to plants, to brutes, and to men, and in each of them ascribed to the soul, has very easily betrayed us from our infancy into this mistake, that the spirit or mind, or thinking principle, in man, is the spring of vegetative and animal life to his body: Whereas it is evident,

that if the spirit or thinking principle of man gave life to his animal nature, the way to save men from dying would not be to use medicines, but to persuade the spirit to abide in the body.

I might derive a third instance from the word heat, which is used to signify the sensation we have when we are near the fire, as well as the cause of that sensation, which is in the fire itself; and thence we conclude from our infancy, that there is a sort of heat in the fire resembling our own sensation, or the heat which we feel: Whereas in the fire there is nothing but little particles of matter, of such particular shapes, sizes, situations and motions, as are fitted to impress such motions on our flesh or nerves as excite the sense of heat. Now if this cause of our sensation in the fire had been always called by a distinct name, perhaps we had not been so rooted in this mistake, that the fire is hot with the same sort of heat that we feel. This will appear with more evidence, when we consider that we are secure from the same mistake where there have been two different names allotted to our sensation, and to the cause of it; as, we do not say, pain is in the fire that burns us, or in the knife that cuts and wounds us; for we call it burning in the fire, cutting in the knife, and pain only when it is in ourselves.

Numerous instances of this kind might be derived from the words sweet, sour, loud, shrill, and almost all the sensible qualities, whose real natures we mistake from our very infancy, and we are ready to suppose them to be the same in us, and in the bodies that cause them; partly, because the words which signify our own sensations are applied also to signify those unknown shapes and motions of the little corpuscles, which excite and cause those sensations.

Direction IV. In conversation or reading be diligent to find out the true sense, or distinct idea, which the speaker or writer affixes to his words, and especially to those words which are the chief subject of his discourse. As far as possible take heed, lest you put more or fewer ideas into one word, than the person did when he wrote or spoke; and endeavour that your ideas of every word may be the same as his were: Then you will judge better of what he speaks or writes.

It is for want of this that men quarrel in the dark; and that there are so many contentions in the several sciences, and especially in divinity. Multitudes of them arise from a mistake of the true sense or complete meaning in which words are used by the writer or speaker; and hereby sometimes they seem to agree, when they really differ in their sentiments: And sometimes they seem to differ when they really agree. Let me give an instance of both.

When one man by the word church shall understand all that believe in Christ; and another by the word church means only the church of Rome; they may both assent to this proposition, there is no salvation out of the church, and yet their inward sentiments may be widely different.

Again, if one writer shall affirm that virtue added to faith is sufficient to make a christian, and another shall as zealously deny this proposition, they seem to differ widely in words, and yet perhaps they may both really agree in sentiment: If by the word virtue, the affirmer intends our whole duty to God and man; and the denier by the word virtue means only courage; or at most our duty towards our neighbour, without including in the idea of it the duty which we owe to God.

Many such sort of contentions as these are, if traced to their original, will be found to be mere logomachies or strifes and quarrels about names and words, and vain janglings, as the apostle calls them in his first letter of advice to Timothy.

In order therefore to attain clear and distinct ideas of what we read and hear, we must search the sense of words; we must consider what is their original and derivation in our own or foreign languages; what is their common sense amongst mankind, or in other authors, especially such as wrote in the same country, in the same age, about the same time, and upon the same subjects: We must consider in what sense the same author uses any particular word or phrase, and that when he is discoursing on the same matter, and especially about the same parts or paragraphs of his writing: We must consider whether the word be used in a strict and limited, or in a large and general sense; whether in a literal, in a figurative, or in a prophetic sense; whether it has any secondary idea annexed to it besides the primary or chief sense. We must inquire further, what is the scope and design of the writer; and what is the connection of that sentence with those that go before it, and those which follow it. By these and other methods, we are to search out the definition of names, that is, the true sense and meaning in which any author or speaker uses any word, which may be the chief subject of discourse, or may carry any considerable importance in it.

Direction V. When we communicate our notions to others, merely with a design to inform and improve their knowledge, let us in the beginning of our discourse take care to adjust the definition of names wheresoever there is need of it; that is, to determine plainly what we mean by the chief words which are the subject of our discourse; and be sure always to keep the same ideas, whensoever we use the same words, unless we give due notice of the change. This will have a very large and happy influence, in securing not only others but ourselves too from confusion and mistake; for even writers and speakers themselves, for want of due watchfulness, are ready to affix different ideas to their own words, in different parts of their discourses, and hereby bring perplexity into their own reasonings, and confound their hearers.

It is by an observation of this rule that mathematicians have so happily secured themselves, and the sciences which they have professed, from wrangling and controversy; because whensoever in the progress of their treatises they have occasion to use a new and unknown word, they always define it, and tell in what sense they shall take it; and in many of their writings you find a heap of definitions at the very beginning. Now if the writers of natural philosophy and morality had used the same accuracy and care, they had effectually secluded a multitude of noisy and fruitless debates out of their several provinces; nor had that sacred theme of divinity been perplexed with so many intricate disputes, nor the church of Christ been torn to pieces by so many sects and factions, if the words grace, faith, righteousness, repentance, justification, worship, church, bishop, presbyters, &c. had been well defined, and their significations adjusted, as near as possible, by the use of those words in the New Testament; or at least, if every writer had told us at first in what sense he would use those words.

Direction VI. In your own studies, as well as in the communication of your thoughts to others, merely for their information, avoid ambiguous and equivocal terms as much as possible. Do not use such words as have two or three definitions of the name belonging to them, that is, such words as have two or three senses, where there is any

danger of mistake. Where your chief business is to inform the judgment, and to explain a matter, rather than to persuade or affect, be not fond of expressing yourselves in figurative language, when there are any proper words that signify the same idea in their literal sense. It is the ambiguity of names, as we have often said, that brings almost infinite confusion into our conceptions of things.

But where there is a necessity of using an ambiguous word, there let double care be used in defining that word and declaring in what sense you take it. And be sure to suffer no ambiguous word ever to come into your definitions.

Direction VII. In communicating your notions, use every word as near as possible in the same sense in which mankind commonly use it; or which writers that have gone before you have usually affixed to it, upon condition that it is free from ambiguity. Though names are in their original merely arbitrary, yet we should always keep to the established meaning of them, unless great necessity require the alteration; for when any word has been used to signify an idea, that old idea will recur in the mind when the word is heard or read rather than any new idea which we may fasten to it. And this is one reason why the received definition of names should be changed as little as possible.

But I add farther, that though a word entirely new, introduced into a language, may be affixed to what idea you please, yet an old word ought never to be fixed to an unaccustomed idea, without just and evident necessity, or without present or previous notice, lest we introduce thereby a licence for all manner of pernicious equivocations and falsehoods; as for instance, when an idle boy who has not seen his book all the morning, shall tell his master that he has learned his lesson, he can never excuse himself by saying, that by the word lesson he meant his breakfast, and by the word learn he meant eating; surely this would be construed a downright lie, and his fancied wit would hardly procure his pardon.

In using an ambiguous word, which has been used in different senses, we may choose what we think the most proper sense, as I have done, *p.* 47, in naming the poles of the loadstone, north or south.

And when a word has been used in two or three senses, and has made a great inroad for error upon that account, it is of good service to drop one or two of those senses, and leave it only one remaining, and fix the other senses or ideas to other words. So the modern philosophers, when they treat of the human soul, they call it the mind, or *mens humana*, and leave the word *anima*, or soul, to signify the principle of life and motion in mere animal beings.

The poet Juvenal has long ago given us a hint of this accuracy and distinction, when he says of brutes and men:

> Indulsit mundi communis conditor illis
> Tantum animas; nobis animum quoque.—*Sat.* ix. *v.* 134.

Exception. There is one case, wherein some of these last rules concerning the definition of words, may be in some measure dispensed with; and that is, when strong and rooted prejudice hath established some favourite word or phrase, and long used it to express some mistaken notion, or to unite some inconsistent ideas; for then it is sometimes much easier to lead the world into truth by indulging their fondness for a phrase, and by assigning and applying new ideas and notions to their favourite word; and this is much safer also than to awaken all their passions by rejecting both their old

words, and phrases, and notions, and introducing all new at once: Therefore we continue to say, there is heat in the fire, there is coldness in ice, rather than invent new words to express the powers which are in fire or ice, to excite the sensations of heat or cold in us. For the same reason some words and phrases which are less proper, may be continued in theology, while people are led into clearer ideas with much more ease and success, than if an attempt were made to change all their beloved forms of speech.

In other cases, these logical directions should generally be observed, and different names affixed to different ideas.

Here I cannot but take occasion to remark, that it is a considerable advantage to any language to have a variety of new words introduced into it, that when in course of time new objects and new ideas arise, there may be new words and names assigned to them: And also where one single name has sustained two or three ideas in time past, these new words may remove the ambiguity by being affixed to some of those ideas. This practice would, by degrees, take away part of the uncertainty of language. And for this reason I cannot but congratulate our English tongue, that it has been abundantly enriched with the translation of words from all our neighbour nations, as well as from ancient languages, and these words have been as it were enfranchised amongst us; for French, Latin, Greek, and German names will signify English ideas, as well as words that are anciently and entirely English.

It may not be amiss to mention in this place, that as the determination of the particular sense in which any word is used is called the definition of the name, so the enumeration of the various senses of an equivocal word is sometimes called the division or distinction of the name; and for this purpose good dictionaries are of excellent use.

This distinction of the name or word is greatly necessary in argumentation or dispute; when a fallacious argument is used, he that answers it distinguishes the several senses of some word or phrase in it, and shews in what sense it is true, and in what sense it is as evidently false.

SECTION IV.

OF THE DEFINITION OF THINGS.

As there is much confusion introduced into our ideas, by the means of those words to which they are affixed, so the mingling our ideas with each other without caution, is a further occasion whereby they become confused. A court lady, born and bred up amongst pomp and equipage, and the vain notions of birth and quality, constantly joins and mixes all these with the idea of herself, and she imagines these to be essential to her nature, and as it were necessary to her being: Thence she is tempted to look upon menial servants, and the lowest rank of mankind, as another species of beings, quite distinct from herself. A plow-boy, that has never travelled beyond his own village, and has seen nothing but thatched houses, and his parish church, is naturally led to imagine that thatch belongs to the very nature of a house, and that that must be a church which is built of stone, and especially if it has a spire upon it. A child, whose uncle has been excessive fond, and his schoolmaster very severe, easily believes that fondness always belongs to uncles, and that severity is essential to masters or instructors. He has seen also soldiers with red coats, or ministers with long black gowns, and

therefore he persuades himself that these garbs are essential to the characters, and that he is not a minister who has not a long black gown, nor can he be a soldier who is not dressed in red. It would be well if all such mistakes ended with childhood.

It might be also subjoined, that our complex ideas become confused, not only by uniting or blending together more simple or single ideas than really belong to them, as in the instances just mentioned; but obscurity and confusion sometimes come upon our ideas also, for want of uniting a sufficient number of single ideas to make the complex one: So if I conceive of a leopard only as a spotted beast, this does not distinguish it from a tyger or a lynx, nor from many dogs or horses, which are spotted too; and therefore a leopard must have some more ideas added to complete and distinguish it.

I grant that it is a large and free acquaintance with the world, a watchful observation and diligent search into the nature of things, that must fully correct this kind of errors: The rules of logick are not sufficient to do it; but yet the rules of logick may instruct us by what means to distinguish one thing from another, and how to search and mark out, as far as may be, the contents and limits of the nature of distinct beings, and thus may give us great assistance towards the remedy of these mistakes.

As the definition of names frees us from that confusion which words introduce, so the definition of things will in some measure guard us against that confusion which mingled ideas have introduced: For as a definition of the name explains what any word means, so a definition of the thing explains what is the nature of that thing.

In order to form a definition of any thing, we must put forth these three acts of the mind:

First, Compare the thing to be defined with other things that are most like to itself, and see wherein its essence or nature agrees with them; and this is called the general nature or genus in a definition: So if you would define what wine is, first compare it with other things like itself, as cyder, perry, &c. and you will find it agrees essentially with them in this, that it is a sort of juice.

Secondly, Consider the most remarkable and primary attribute, property, or idea wherein this thing differs from those other things that are most like it; and that is its essential or specific difference; so wine differs from cyder and perry, and all other juices, in that it is pressed from a grape. This may be called its special nature, which distinguishes it from other juices.

Thirdly, Join the general and special nature together, or, which is all one, the genus and the difference, and these make up a definition. So the juice of a grape, or juice pressed from grapes, is the definition of wine.

So if I would define what winter is, I consider first wherein it agrees with other things which are most like it, namely, summer, spring, autumn, and I find they are all seasons of the year; therefore, a season of the year is the genus. Then I observe wherein it differs from these, and that is in the shortness of the days; for it is this which does primarily distinguish it from other seasons; therefore this may be called its special nature, or its difference. Then by joining these together I make a definition. Winter is that season of the year wherein the days are shortest. I confess indeed this is but a ruder definition of it, for to define it as an accurate astronomer, I must limit the days, hours and minutes.

After the same manner, if we would explain or define what the picture of a man is,

we consider first the genus, or general nature of it, which is a representation; and herein it agrees with many other things, as a statue, a shadow, a print, a verbal description of a man, &c. Then we consider wherein it differs from these, and we find it differs from a verbal description in that it is a representation to the eye, and not to the ear; it differs from a statue, in that it is a representation upon a flat surface, and not in a solid figure: It differs from a shadow, in that it is an abiding representation, and not a fleeting one: It differs from a print or draught, because it represents the colours by paint, as well as the shape of the object by delineation. Now so many, or rather so few of these ideas put together, as are just sufficient to distinguish a picture from all other representations, make up its essential difference, or its special nature; and all these are included in its being painted on a plain surface. Then join this to the genus, which is a representation; and thus you have the complete definition of the picture of a man, namely, it is the representation of a man in paint upon a surface, or a plane.

Here it must be observed, that when we speak of the genus and difference as composing a definition, it must always be understood that the nearest genus, and the specific difference are required.

The next general nature, or the nearest genus, must be used in a definition, because it includes all the rest as parts of its complex idea; as if I would define wine, I must say, wine is a juice, which is the nearest genus; and not say, wine is a liquid, which is a remote general nature; or wine is a substance, which is yet more remote, for juice includes both substance and liquid. Besides, neither of these two remote general natures would make any distinction between wine and a thousand other substances, or other liquids, a remote genus leaves the thing too much undistinguished.

The specific difference is that primary attribute which distinguishes each species from one another, while they stand ranked under the same general nature or genus. Though wine differs from other liquids, in that it is the juice of a certain fruit, yet this is but a general or generic difference, for it does not distinguish wine from cyder or perry; the specific difference of wine therefore is its pressure from the grape; as cyder is pressed from apples, and perry from pears.

In definitions also we must use the primary attribute that distinguishes the species or special nature, and not attempt to define wine by its particular tastes, or effects, or other properties, which are but secondary or consequential, when its pressure from the grape is the most obvious and primary distinction of it from all other juices. I confess in some cases it is not so easily known which is the primary idea that distinguishes one thing from another; and therefore some would as soon define winter by the coldness of the season, as by the shortness of the days: Though the shortness of the days is doubtless the most just, primary, and philosophical difference betwixt that and the other seasons of the year, since winter days are always shortest, but not always the coldest: I add also, that the shortness of the days is one cause of the coldness, but the cold is no cause of their shortness.

SECTION V.

RULES OF DEFINITION OF THE THING.

THE special rules of a good definition are these:

Rule I. A definition must be universal, or as some call it, adequate; that is, it must

agree to all the particular species or individuals that are included under the same idea; so the juice of the grape agrees to all proper wines, whether red, white, French, Spanish, Florence, &c.

Rule II. It must be proper and peculiar to the thing defined, and agree to that alone; for it is the very design of a definition effectually to distinguish one thing from all others: So the juice of the grape agrees to no other substance, to no other liquid, to no other being but wine.

These two rules being observed, will always render a definition reciprocal with the thing defined; which is a scholastic way of speaking, to signify that the definition may be used in any sentence in the place of the thing defined; or they may be mutually affirmed concerning each other, or substituted in the room of each other. The juice of the grape is wine, or wine is the juice of the grape. And wheresoever the word wine is used, you may put the juice of the grape instead of it, except when you consider wine rather as a word than a thing, or when it is mentioned in such logical rules.

Rule III. A definition ought to be clear and plain; for the design of it is to lead us into the knowledge of the thing defined.

Hence it will follow, that the words used in a definition ought not to be doubtful, and equivocal, and obscure, but as plain and easy as the language will afford: And indeed it is a general rule concerning the definition of both names and things, that no word should be used in either of them, which has any darkness or difficulty in it, unless it has been before explained or defined.

Hence it will follow also, that there are many things which cannot well be defined either as to the name or the thing, unless it be by synonimous words, or by a negation of the contrary idea, &c. for learned men know not how to make them more evident, or more intelligible, than the ideas which every man has gained by the vulgar methods of teaching. Such are the ideas of extension, duration, thought, consciousness, and most of our simple ideas, and particularly sensible qualities, as white, blue, red, cold, heat, shrill, bitter, sour, &c.

We can say of duration, that it is a continuance in being, or a not ceasing to be; we can say of consciousness, that it is as it were a feeling within ourselves; we may say heat is that which is not cold; or sour is that which is like vinegar; or we may point to the clear sky, and say that is blue. These are the vulgar methods of teaching the definitions of names, or meaning of words. But there are some philosophers, whose attempts to define these things learnedly, have wrapped up their ideas in greater darkness, and exposed themselves to ridicule and contempt; as when they define heat, they say, it is *qualitas congregans homogenea et segregans heterogenea*, that is, a quality gathering together things of the same kind, and separating things of a different kind. So they define white, a colour arising from the prevalency of brightness: But every child knows hot and white better without these definitions.

There are many other definitions given by the peripatetick philosophers, which are very faulty by reason of their obscurity; as motion is defined by them the act of a being in power, so far forth as it is in power. Time is the measure or number of motion according to past, present and future. The soul is the act of an organical natural body, having life in power; and several others of the same stamp.

Rule IV. It is also commonly prescribed amongst the rules of definition, that it should be short, so that it must have no tautology in it, nor any words superfluous.

I confess, definitions ought to be expressed in as few words as is consistent with a clear and just explication of the nature of the thing defined, and a distinction of it from all other things beside: But it is of much more importance, and far better, that a definition should explain clearly the subject we treat of, though the words be many, than to leave obscurities in the sentence, by confining it within too narrow limits. So in the definition which we have given of Logick, that it is the art of using reason well in the search after truth and the communication of it to others, it has indeed many words in it, but it could not well be shorter. Art is the genus wherein it agrees with rhetoric, poesy, arithmetic, wrestling, sailing, building, &c. for all these are arts also: But the difference or special nature of it is drawn from its object, reason; from the act, using it well, and from its two great ends or designs, namely, the search after truth, and the communication of it; nor can it be justly described and explained in fewer ideas.

Rule V. If we add a fifth rule, it must be, that neither the thing defined nor a mere synonymous name, should make any part of the definition, for this would be no explication of the nature of the thing; and a synonymous word at best could only be a definition of the name.

SECTION VI.

OBSERVATIONS CONCERNING THE DEFINITION OF THINGS.

BEFORE I part with this subject, I must propose several observations which relate to the definition of things.

1. There is no need that in definitions we should be confined to one single attribute or property, in order to express the difference of the thing defined, for sometimes the essential difference consists in two or three ideas or attributes. So a grocer is a man who buys and sells sugar, and plums, and spices, for gain. A clock is an engine, with weights and wheels, that shows the hour of the day both by pointing and striking: And if I were to define a repeating clock, I must add another property, namely, that it also repeats the hour. So that the true and primary essential difference of some complex ideas consisting in several distinct properties, cannot be well expressed without conjunctive particles of speech.

2. There is no need that definitions should always be positive, for some things differ from others merely by a defect of what others have; as if a chair be defined a seat for a single person with a back belonging to it, then a stool is a seat for a single person without a back; and a form is a seat for several persons without a back: These are negative differences. So sin is a want of conformity to the law of God; blindness is a want of sight; a vagabond is a person without a home. Some ideas are negative, and their definitions ought to be so too.

3. Some things may have two or more definitions, and each of them equally just and good; as a mile is the length of eight furlongs, or it is the third part of a league. Eternal is that which ever was, and ever shall be; or it is that which had no beginning, and shall have no end. Man* is usually defined a rational animal: But it may be much

* The common definition of man, namely, a rational animal, is very faulty; 1. Because the animal is not rational; the rationality of man arises from the mind to which the animal is united. 2. Because if a spirit should be united to a horse and make it a rational being, surely this would not be a man; it is evident therefore that the peculiar shape must enter into the definition of a man to render it just and perfect; and for want of a full description thereof, all our definitions are defective.

better to define him a spirit united to an animal of such a shape, or an animal of such a peculiar shape united to a spirit, or a being composed of such an animal and a mind.

4. Where the essences of things are evident, and clearly distinct from each other, there we may be more exact and accurate in the definitions of them: But where their essences approach near to each other, the definition is more difficult. A bird may be defined a feathered animal with wings, a ship may be defined a large hollow building made to pass over the sea with sails: But if you ask me to define a bat, which is between a bird and a beast, or to define a barge and hoy, which are between a boat and a ship, it is much harder to define them, or to adjust the bounds of their essence. This is very evident in all monstrous births, and irregular productions of nature, as well as in many works of art, which partake so much of one species and so much of another, that we cannot tell under which species to rank them, or how to determine their specific difference.

The several species of beings are seldom precisely limited in the nature of things by any certain and unalterable bounds: The essences of many things do not consist in *indivisibili*, or in one evident indivisible point, as some have imagined; but by various degrees they approach nearer to, or differ more from others that are of a kindred nature. So, as I have hinted before, in the very middle of each of the arches of a rainbow, the colours of green, yellow, and red, are sufficiently distinguished; but near the borders of the several arches they run into one another, so that you hardly know how to limit the colours, nor whether to call it red or yellow, green or blue.

5. As the highest or chief genuses, namely, being and not-being, can never be defined, because there is no genus superior to them; so neither can singular ideas or individuals be well defined, because either they have no essential differences from other individuals, or their differences are not known; and therefore individuals are only to be described by their particular circumstances: So king George is distinguished from all other men and other kings, by describing him as the first king of Great Britain of the house of Brunswick; and Westminster-Hall is described by its situation and its use, &c.

That individual bodies can hardly have any essential difference, at least within the reach of our knowledge, may be made thus to appear; Methuselah, when he was nine hundred and sixty years old, and perhaps worn out with age and weakness, was the same person as when he was in his full vigour of manhood, or when he was an infant, newly born; but how far was his body the same? Who can tell whether there was any fibre of his flesh or his bones that continued the same throughout his whole life? Or who can determine which were those fibres? The ship in which Sir Francis Drake sailed round the world, might be new built, and refitted so often, that few of the same timbers remained; and who can say whether it must be called the same ship or no? And what is its essential difference? How shall we define Sir Francis Drake's ship, or make a definition for Methuselah?

To this head belongs that most difficult question, What is the principle of individuation? Or what is it that makes any one thing the same as it was some time before? This is too large and laborious an inquiry to dwell upon in this place: Yet I cannot forbear to mention this hint, namely, since our own bodies must rise at the last day for us to receive rewards or punishments in them, there may be perhaps some original fibres of each human body, some *stamina vitæ*, or primeval seed of life, which may remain unchanged through all the stages of life, death and the grave; these may become the

springs and principles of a resurrection, and sufficient to denominate it the same body. But if there be any such constant and vital atoms which distinguish every human body, they are known to God only.

6. Where we cannot find out the essence or essential difference of any species or kind of beings that we would define, we must content ourselves with a collection of such chief parts or properties of it, as may best explain it so far as it is known, and best distinguish it from other things: So a marigold is a flower which hath many yellow long leaves, round a little knot of seed in the midst, with such a peculiar stalk, &c. So if we would define silver, we say it is a white and hard metal, next in weight to gold: If we would define an elder-tree, we might say it is one among the lesser trees, whose younger branches are soft and full of pith, whose leaves are jagged or indented, and of such a particular shape, and it bears large clusters of small black berries; So we must define water, earth, stone, a lion, an eagle, a serpent, and the greatest part of natural beings, by a collection of those properties, which according to our observation distinguish them from all other things. This is what Mr. Locke calls nominal essences, and nominal definitions. And indeed, since the essential differences of the various natural beings or bodies round about us arise from a peculiar shape, size, motion, and situation, of the small particles of which they are composed, and since we have no sufficient method to inform us what these are, we must be contented with such a sort of definition of the bodies they compose.

Here *note*, That this sort of definition, which is made up of a mere collection of the most remarkable parts or properties, is called an imperfect definition, or a description; whereas the definition is called perfect, when it is composed of the essential difference, added to the general nature or genus.

7. The perfect definition of any being always includes the definition of the name whereby it is called, for it informs us of the sense or meaning of that word, and shows us what idea that word is affixed to: But the definition of the name does by no means include a perfect definition of the thing; for, as we have said before, a mere synonymous word, a negation of the contrary, or the mention of any one or two distinguishing properties of the thing, may be a sufficient definition of the name. Yet in those cases where the essential difference or essence of a thing is unknown, there a definition of the name by the chief properties, and a description of the thing, are much the same.

And here I think it necessary to take notice of one general sentiment, that seems to run through that excellent performance, Mr. Locke's Essay of Human Understanding, and that is, "That the essences of things are utterly unknown to us, and therefore all our pretences to distinguish the essences of things can reach no farther than mere nominal essences; or a collection of such properties as we know; to some of which we affix particular names, and others we bundle up, several together, under one name: And that all our attempts to rank beings into different kinds of species can reach no farther than to make mere nominal species; and therefore our definitions of things are but mere nominal descriptions or definitions of the name."

Now, that we may do justice to this great author, we ought to consider that he confines this sort of discourse only to the essence of simple ideas, and to the essence of substances, as appears evident in the fourth and sixth chapters of his third book; for he allows the names of mixed modes always to signify the real essences of their species,

Chap. v. and he acknowledges artificial things to have real distinct species; and that in the distinction of their essences, there is generally less confusion and uncertainty than in natural, Chap. vi. Sect. 40, 41. though it must be confessed, that he scarce makes any distinction between the definition of the name and the definition of the thing, as Chap. iv. and sometimes the current of his discourse decries the knowledge of essences in such general terms as may justly give occasion to mistake.

It must be granted, that the essence of most of our simple ideas, and the greatest part of particular natural substances, are much unknown to us; and therefore the essential difference of sensible qualities and of the various kinds of bodies, as I have said before, lie beyond the reach of our understandings; we know not what makes the primary real inward distinctions between red, green, sweet, sour, &c. between wood, iron, oil, stone, fire, water, flesh, clay, in their general natures, nor do we know what are the inward and prime distinctions between all the particular kinds or species in the vegetable, animal, mineral, metallic, or liquid world of things. See Philosophical Essays, Essay xi. Sect. 1.

But still there is a very large field for the knowledge of the essences of things, and for the use of perfect definitions amongst our complex ideas, the modal appearances and changes of nature, the works of art, the matters of science, and all the affairs of the civil, the moral and the religious life: And indeed it is of much more importance to all mankind, to have a better acquaintance with the works of art for their own livelihood and daily use, with the affairs of morality for their behaviour in this world, and with the matters of religion, that they may be prepared for the world to come, than to be able to give a perfect definition of the works of nature.

If the particular essences of natural bodies are unknown to us, we may yet be good philosophers, good artists, good neighbours, good subjects, and good christians, without that knowledge, and we have just reason to be content.

Now that the essences of some of the modal appearances and changes in nature, as well as things of art, science and morality, are sufficiently known to us to make perfect definitions of them, will appear by the specimen of a few definitions of these things.

Motion is a change of place. Swiftness is the passing over a long space in a short time. A natural day is the time of one alternate revolution of light and darkness, or it is the duration of twenty-four hours. An eclipse of the sun is a defect in the sun's transmission of light to us by the moon interposing. *Snow is congealed vapour. *Hail is congealed rain. An *island is a piece of land rising above the surrounding water. A *hill is an elevated part of the earth, and a *grove is a piece of ground thick set with trees. A house is a building made to dwell in. A cottage is a mean house in the country. A supper is that meal which we make in the evening. A triangle is a figure composed of three sides. A gallon is a measure containing eight pints. A porter is a man who carries burdens for hire. A king is the chief ruler in a kingdom. Veracity is the conformity of our words to our thoughts. Covetousness is an excessive love of money, or other possessions. Killing is the taking away the life of an animal. Murder is the unlawful killing of a man. Rhetorick is the art of speaking in a manner fit to persuade. Natural philosophy is the knowledge of the properties of bodies, and

* *Note*, Island, hill, grove, are not designed here in their more remote and substantial natures, if I may so express it, or as the matter of them is earth; for in this sense we know not their essence, but only as considered in their modal appearances, whereby one part of earth is distinguished from another. The same may be said of snow, hail, &c.

the various effects of them, or it is the knowledge of the various appearances in nature, and their causes; and logick is the art of using our reason well, &c.

Thus you see the essential differences of various beings may be known, and are borrowed from their qualities and properties, their causes, effects, objects, adjuncts, ends, &c. and indeed as infinitely various as the essences of things are, their definitions must needs have very various forms.

After all, it must be confessed, that many logicians and philosophers in the former ages, have made too great a bustle about the exactness of their definitions of things, and entered into long fruitless controversies, and very ridiculous debates in the several sciences, about adjusting the logical formalities of every definition; whereas that sort of wrangling is now grown very justly contemptible, since it is agreed that true learning and the knowledge of things depends much more upon a large acquaintance with their various properties, causes, effects, subjects, objects, ends, and designs, than it does upon the formal and scholastic niceties of genus and difference.

SECTION VII.

OF A COMPLETE CONCEPTION OF THINGS.

HAVING dwelt so long upon the first rule to direct our conceptions, and given an account of the definition both of names and things, in order to gain clear and distinct ideas, we make haste now to the second rule to guide our conceptions, and that is, Conceive of things completely in all their parts.

All parts have a reference to some whole: Now there is an old distinction which logical writers make of a whole and its parts into four several kinds, and it may be proper just to mention them here.

1. There is a metaphysical whole, when the essence of a thing is said to consist of two parts, the genus and the difference, that is, the general and the special nature, which being joined together make up a definition. This has been the subject of the foregoing sections.

2. There is a mathematical whole, which is better called integral, when the several parts which go to make up the whole are really distinct from one another, and each of them may subsist apart. So the head, the limbs and the trunk, are the integral parts of an animal body; so units are the integral parts of any large number; so these discourses which I have written concerning perception, judgment, reasoning, and disposition, are the four integral parts of logick. This sort of parts goes to make up the completeness of any subject, and this is the chief and most direct matter of our discourse in this section.

3. There is a physical or essential whole, which is usually made to signify and include only the two essential parts of man, body and soul: But I think the sense of it may better be altered, or at least enlarged, and so include all the essential modes, attributes, or properties, which are contained in the comprehension of any idea. This shall be the subject of discourse under the third rule to direct our conceptions.

4. There is a logical whole, which is also called an universal; and the parts of it are all the particular ideas to which this universal nature extends. So a genus is a whole, in respect of the several species which are its parts. So the species is a whole, and all

the individuals are the parts of it. This shall be treated of in the fourth rule to guide our conceptions.

At present we consider an idea as an integral whole, and our second rule directs us to contemplate it in all its parts: But this can only refer to complex ideas, for simple ideas have no parts.

SECTION VIII.

OF DIVISION, AND THE RULES OF IT.

Since our minds are narrow in their capacity, and cannot survey the several parts of any complex being with one single view, as God sees all things at once; therefore we must, as it were, take it to pieces, and consider of the parts separately, that we may have a more complete conception of the whole. So if I would learn the nature of a watch, the workman takes it to pieces and shows me the spring, the wheels, the axles, the pinions, the balance, the dial-plate, the pointer, the case, &c. and describes each of these things to me apart, together with their figures and their uses. If I would know what an animal is, the anatomist considers the head, the trunk, the limbs, the bowels, apart from each other, and gives me distinct lectures upon each of them. So a kingdom is divided into its several provinces; a book into its several chapters; and any science is divided according to the several subjects of which it treats.

This is what we properly call the division of an idea, which is an explication of the whole by its several parts, or an enumeration of the several parts, that go to compose any whole idea, and to render it complete. And I think when man is divided into body and soul, it properly comes under this part of the doctrine of integral division, as well as when the mere body is divided into head, trunk, and limbs: This division is sometimes called partition.

When any of the parts of an idea are yet farther divided in order to a clear explication of the whole, this is called a subdivision; as when a year is divided into months, each month into days, and each day into hours, which may also be farther subdivided into minutes and seconds.

It is necessary, in order to the full explication of any being, to consider each part, and the properties of it, distinct by itself, as well as in its relation to the whole: For there are many properties that belong to the several parts of a being which cannot properly be ascribed to the whole, though these properties may fit each part for its proper station, and as it stands in that relation to the whole complex being: As in a house, the doors are moveable, the rooms square, the ceilings white, the windows transparent, yet the house is neither moveable, nor square, nor white, nor transparent.

The special rules of a good division are these:

Rule I. Each part singly taken must contain less than the whole, but all the parts taken collectively, or together, must contain neither more nor less than the whole. Therefore if in discoursing of a tree you divide it into the trunk and leaves, it is an imperfect division, because the root and the branches are needful to make up the whole. So Logick would be ill divided into apprehension, judgment and reasoning; for method is a considerable part of the art which teaches us to use our reason right, and should by no means be omitted.

Upon this account, in every division wherein we design a perfect exactness, it is necessary to examine the whole idea with diligence, lest we omit any part of it through want of care; though in some cases it is not possible, and in others it is not necessary, that we should descend to the minutest parts.

Rule II. In all divisions we should first consider the larger and more immediate parts of the subject, and not divide it at once into the more minute and remote parts. It would by no means be proper to divide a kingdom, first into streets, and lanes, and fields; but it must be first divided into provinces or counties, then those counties may be divided into towns, villages, fields, &c. and towns into streets and lanes.

Rule III. The several parts of a division ought to be opposite; that is, one part ought not to contain another. It would be a ridiculous division of an animal into head, limbs, body and brains, for the brains are contained in the head.

Yet here it must be noted, that sometimes the subjects of any treatise, or the objects of any particular science, may be properly and necessarily so divided, that the second may include the first, and the third may include the first and second, without offending against this rule, because in the second or following parts of the science or discourse, these objects are not considered in the same manner as in the first; as for instance, geometry divides its object into lines, surfaces, and solids: Now though a line be contained in a surface or a solid, yet it is not considered in a surface separate and alone, or as a mere line, as it is in the first part of geometry, which treats of lines. So Logick is rightly divided into conception, judgment, reasoning, and method. For though ideas or conceptions are contained in the following parts of Logick, yet they are not there treated of as separate ideas, which are the proper subject of the first part.

Rule IV. Let not subdivisions be too numerous without necessity: For it is better many times to distinguish more parts at once, if the subject will bear it, than to mince the discourse by excessive dividing and subdividing. It is preferable therefore in a treatise of geography, to say, that in a city we will consider its walls, its gates, its buildings, its streets and lanes, than to divide it formally first into the encompassing and the encompassed parts; the encompassing parts are the walls, and gates; the encompassed parts include the ways and the buildings; the ways are the streets and the lanes; buildings consist of the foundations, and the superstructure, &c.

Too great a number of subdivisions has been affected by some persons in sermons, treatises, instructions, &c. under pretence of greater accuracy: But this sort of subtleties hath often caused great confusion to the understanding, and sometimes more difficulty to the memory. In these cases it is only a good judgment can determine what subdivisions are useful.

Rule V. Divide every subject according to the special design you have in view. One and the same idea or subject may be divided in very different manners, according to the different purposes we have in discoursing of it. So if a printer were to consider the several parts of a book, he must divide it into sheets, the sheets into pages, the pages into lines, and the lines into letters. But a grammarian divides a book into periods, sentences and words, or parts of speech, as noun, pronoun, verb, &c. A logician considers a book as divided into chapters, sections, arguments, propositions, ideas; and, with the help of ontology, he divides the propositions into subject, object, property, relation, action, passion, cause, effect, &c. But it would be very ridiculous for a

logician to divide a book into sheets, pages and lines; or for a printer to divide it into nouns and pronouns, or into propositions, ideas, properties, or causes.

Rule VI. In all your divisions observe with greatest exactness the nature of things. And here I am constrained to make a subdivision of this rule into two very necessary particulars.

1. Let the parts of your division be such as are properly distinguished in nature. Do not divide asunder those parts of the idea which are intimately united in nature, nor unite those things into one part which nature has evidently disjoined: Thus it would be very improper, in treating of an animal body, to divide it into the superior and inferior halves; for it would be hard to say how much belongs by nature to the inferior half, and how much to the superior. Much more improper would it be still to divide the animal into the right hand parts and left hand parts, which would bring greater confusion. This would be as unnatural as if a man should cleave a hasel-nut in halves through the husk, the shell, and the kernel, at once, and say, a nut is divided into these two parts; whereas nature leads plainly to the threefold distinction of husk, shell and kernel.

2. Do not affect duplicities, nor triplicities, nor any certain number of parts in your division of things; for we know of no such certain number of parts which God the Creator has observed in forming all the varieties of his creatures; nor is there any uniform determined number of parts in the various subjects of human art or science; yet some persons have disturbed the order of nature, and abused their readers, by an affectation of dichotomies, trichotomies, sevens, twelves, &c. Let the nature of the subject, considered together with the design which you have in view, always determine the number of parts into which you divide it.

After all, it must be confessed that an intimate knowledge of things, and a judicious observation, will assist in the business of division, as well as of definition, better than too nice and curious an attention to the mere formalities of logical writers, without a real acquaintance with things.

SECTION IX.

OF A COMPREHENSIVE CONCEPTION OF THINGS, AND OF ABSTRACTION.

The third rule to direct our conception, requires us to conceive of things comprehensively. As we must survey an object in all its parts to obtain a complete idea of it, so we must consider it in all its modes, attributes, properties, and relations, in order to obtain a comprehensive conception of it.

The comprehension of an idea, as it was explained under the doctrine of universals, includes only the essential modes or attributes of that idea; but in this place the word is taken in a larger sense; and implies also the various occasional properties, accidental modes, and relations.

The necessity of this rule is founded upon the same reason as the former; namely, That our minds are narrow and scanty in their capacities, and as they are not able to consider all the parts of a complex idea at once, so neither can they at once contemplate all the different attributes and circumstances of it: we must therefore consider things successively and gradually in their various appearances and circumstances; as our natural eye cannot at once behold the six sides of a dye or cube, nor take cogni-

zance of all the points that are marked on them, and therefore we turn up the sides successively, and thus survey and number the points that are marked on each side, that we may know the whole.

In order to a comprehensive view of any idea, we must first consider, whether the object of it has an existence as well as an essence; whether it be a simple or complex idea; whether it be a substance or a mode; if it be a substance, then we must enquire what are the essential modes of it which are necessary to its nature, and what are those properties or accidents of it which belong to it occasionally, or as it is placed in some particular circumstances: We must view it in its internal and absolute modes, and observe it in those various external relations in which it stands to other beings: We must consider it in its powers and capacities either to do or suffer: We must trace it up to its various causes, whether supreme or subordinate. We must descend to the variety of its effects, and take notice of the several ends and designs which are to be attained by it. We must conceive of it as it is either an object or a subject, what are the things that are akin to it, and what are the opposites or contraries of it; for many things are to be known both by their contrary and their kindred ideas.

If the thing we discourse of be a mere mode, we must enquire whether it belong to spirits or bodies; whether it be a physical or moral mode; if moral, then we must consider its relation to God, to ourselves, to our neighbours; its reference to this life, or the life to come. If it be a virtue, we must seek what are the principles of it, what are the rules of it, what are the tendencies of it, and what are the false virtues that counterfeit it, and what are the real vices that oppose it, what are the evils which attend the neglect of it, and what are the rewards of the practice of it, both here and hereafter.

If the subject be historical, or a matter of fact, we may then enquire whether the action was done at all; whether it was done in such a manner, or by such persons as is reported; at what time it was done; in what place; by what motive, and for what design; what is the evidence of the fact; who are the witnesses; what is their character and credibility; what signs there are of such a fact; what concurrent circumstances which may either support the truth of it, or render it doubtful.

In order to make due enquiries into all these and many other particulars which go towards the complete and comprehensive idea of any being, the science of ontology is exceeding necessary. This is what was wont to be called the first part of metaphysicks in the peripatetick schools. It treats of being in its most general nature, and of all its affections and relations. I confess the old popish schoolmen have mingled a number of useless subtleties with this science; they have exhausted their own spirits, and the spirits of their readers, in many laborious and intricate trifles; and some of their writings have been fruitful of names without ideas, which have done much injury to the sacred study of divinity. Upon this account many of the moderns have most unjustly abandoned the whole science at once, and thrown abundance of contempt and raillery upon the very name of metaphysicks; but this contempt and censure is very unreasonable, for this science, separated from some aristotelian fooleries and scholastick subtleties, is so necessary to a distinct conception, solid judgment, and just reasoning on many subjects, that sometimes it is introduced as a part of Logick, and not without reason. And those who utterly despise and ridicule it, either betray

their own ignorance, or will be supposed to make their wit and banter a refuge and excuse for their own laziness. Yet thus much I would add, that the later writers of ontology are generally the best on this account, because they have left out much of the ancient jargon. See the Brief Scheme of Ontology, in the Philosophical Essays, by *I. W.*

Here let it be noted, that it is neither useful, necessary, or possible to run through all the modes, circumstances, and relations of every subject we take in hand; but in ontology we enumerate a great variety of them, that so a judicious mind may choose what are those circumstances, relations and properties of any subject, which are most necessary to the present design of him that speaks or writes, either to explain, to illustrate, or to prove the point.

As we arrive at the complete knowledge of an idea in all its parts, by that act of the mind which is called division, so we come to a comprehensive conception of a thing in its several properties and relations, by that act of the mind which is called abstraction; that is, we consider each single relation or property of the subject alone, and thus we do as it were withdraw and separate it in our minds both from the subject itself, as well as from other properties and relations, in order to make a fuller observation of it.

This act of abstraction is said to be twofold, either precisive or negative.

Precisive abstraction is, when we consider those things apart which cannot really exist apart; as when we consider a mode, without considering its substance and subject, or one essential mode without another. Negative abstraction is, when we consider one thing separate from another, which may also exist without it; and when we conceive of a subject without conceiving of its accidental modes or relations; or when we conceive of one accident without thinking of another. If I think of reading or writing without the express idea of some man, this is precisive abstraction; or if I think of the attraction of iron, without the express idea of some particular magnetick body. But when I think of a needle without an idea of its sharpness, this is negative abstraction; and it is the same when I think of its sharpness without considering its length.

SECTION X.

OF THE EXTENSIVE CONCEPTION OF THINGS, AND OF DISTRIBUTION.

As the completeness of an idea refers to the several parts that compose it, and the comprehension of an idea includes its various properties, so the extension of an idea denotes the various sorts or kinds of beings to which the same idea belongs: And if we would be fully acquainted with a subject, we must observe,

This fourth rule to direct our conceptions, namely, Conceive of things in all their extention; that is, we must search out the various species, or special natures which are contained under it, as a genus or general nature. If we would know the nature of an animal perfectly, we must take cognizance of beasts, birds, fishes, and insects, as well as men, all which are contained under the general nature and name of animal.

As an integral whole is distinguished into its several parts by division; so the word distribution is most properly used when we distinguish an universal whole into its several kinds or species; and perhaps it had been better if this word had been always

confined to this signification, though it must be confessed, that we frequently speak of the division of an idea into its several kinds, as well as into its several parts.

The rules of a good distribution are much the same with those which we have before applied to division, which may be just repeated again in the briefest manner, in order to give examples of them.

Rule I. Each part singly taken must contain less than the whole, but all the parts taken collectively, or together, must contain neither more nor less than the whole; or as logicians sometimes express it, the parts of the division ought to exhaust the whole thing which is divided. So medicine is justly distributed into prophylactick, or the art of preserving health; and therapeutick, or the art of restoring health; for there is no other sort of medicine besides these two. But men are not well distributed into tall or short, for there are some of a middle stature.

Rule II. In all distributions we should first consider the larger and more immediate kinds or species, or ranks of being, and not divide a thing at once into the more minute and remote. A genus should not at once be divided into individuals, or even into the lowest species, if there be a species superior. Thus it would be very improper to divide animal into trout, lobster, eel, dog, bear, eagle, dove, worm, and butterfly, for these are inferior kinds; whereas animal ought first to be distributed into man, beast, bird, fish, insect; and then beast should be distributed into dog, bear, &c. bird into eagle, dove, &c. fish into trout, eel, lobster, &c.

It is irregular also to join any inferior species in the same rank or order with the superior; as if we should distinguish animals into birds, bears, and oysters, &c. it would be a ridiculous distribution.

Rule III. The several parts of a distribution ought to be opposite; that is, one species or class of beings in the same rank of division, ought not to contain or include another; so men ought not to be divided into the rich, the poor, the learned and the tall; for poor men may be both learned and tall, and so may the rich.

But it will be objected, are not animated bodies rightly distributed into vegetative and animal, or, as they are usually called, sensitive? Now the sensitive contains the vegetative nature in it, for animals grow as well as plants. I answer, that in this, and all such distributions, the word vegetative signifies merely vegetative; and in this sense vegetative will be sufficiently opposite to animal, for it cannot be said of an animal that it contains mere vegetation in the idea of it.

Rule IV. Let not subdivisions be too numerous, without necessity; therefore I think quantity is better distinguished at once into a line, a surface, and a solid; than to say, as Ramus does, that quantity is either a line, or a thing lined; and a thing lined is either a surface or a solid.

Rule V. Distribute every subject according to the special design you have in view, so far as is necessary or useful to your present enquiry. Thus a politician distributes mankind according to their civil characters, into the rulers and the ruled; and a physician divides them into the sick or the healthy; but a divine distributes them into Turks, Heathens, Jews, or Christians.

Here note, That it is a very useless thing to distribute any idea into such kinds or members as have no different properties to be spoken of; as it is mere trifling to divide

right angles into such whose legs are equal and whose legs are unequal, for as to the mere right angle they have no different properties.

Rule VI. In all your distributions observe the nature of things with great exactness; and do not affect any particular form of distribution, as some persons have done, by dividing every genus into two species, or into three species; whereas nature is infinitely various, and human affairs and human sciences have as great a variety, nor is there any one form of distribution that will exactly suit with all subjects.

Note. It is to this doctrine of distribution of a genus into its several species, we must also refer the distribution of a cause according to its several effects, as some medicines are heating, some are cooling; or an effect, when it is distinguished by its causes; as faith is either built upon divine testimony or human. It is to this head we refer particular artificial bodies when they are distinguished according to the matter they are made of, as a statue is either of brass, of marble, or wood, &c. and any other beings, when they are distinguished according to their end and design, as the furniture of body or mind is either for ornament or use. To this head also we refer subjects when they are divided according to their modes or accidents; as men are either merry, or grave, or sad; and modes, when they are divided by their subjects, as distempers belong to the fluids, or to the solid parts of the animal.

It is also to this place we reduce the proposals of a difficulty under its various cases, whether it be in speculation or practice; as, to shew the reason of sun-beams burning wood, whether it be done by a convex glass or a concave; or to shew the construction and mensuration of triangles, whether you have two angles and a side given, or two sides and an angle, or only three sides. Here it is necessary to distribute or divide a difficulty into all its cases, in order to gain a perfect knowledge of the subject you contemplate.

It might be observed here, that logicians have sometimes given a mark or sign to distinguish when it is an integral whole, that is divided into its parts or members, or when it is a genus, an universal whole, that is distributed into its species and individuals. The rule they give is this: Whensoever the whole idea can be directly and properly affirmed of each part, as a bird is an animal, a fish is an animal, Bucephalus is a horse, Peter is a man, then it is a distribution of a genus into its species, or a species into its individuals: But when the whole cannot be thus directly affirmed concerning every part, then it is a division of an integral into its several parts or members; as we cannot say the head, the breast, the hand, or the foot is an animal, but we say, the head is a part of the animal, and the foot is another part.

This rule may hold true generally in corporeal beings, or perhaps in all substances: But when we say the fear of God is wisdom, and so is human civility: Criticism is true learning, and so is philosophy: To execute a murderer is justice, and to save and defend the innocent is justice too. In these cases it is not so easily determined, whether an integral whole be divided into its parts, or an universal into its species: For the fear of God may be called either one part, or one kind of wisdom: Criticism is one part, or one kind of learning: And the execution of a murderer may be called a species of justice, as well as a part of it. Nor indeed is it a matter of great importance to determine this controversy.

SECTION XI.

OF AN ORDERLY CONCEPTION OF THINGS.

THE last rule to direct our conceptions is, that we should rank and place them in a proper method and just order. This is of necessary use to prevent confusion; for as a trader who never places his goods in his shop or warehouse in a regular order, nor keeps the accounts of his buying and selling, paying and receiving, in a just method, is in the utmost danger of plunging all his affairs into confusion and ruin: So a student who is in the search of truth, or an author or teacher who communicates knowledge to others, will very much obstruct his design, and confound his own mind or the minds of his hearers, unless he range his ideas in just order.

If we would therefore become successful learners or teachers, we must not conceive of things in a confused heap, but dispose our ideas in some certain method, which may be most easy and useful both for the understanding and memory; and be sure, as much as may be, to follow the nature of things, for which many rules might be given, namely:

1. Conceive as much as you can of the essentials of any subject, before you consider its accidentals.

2. Survey the first general parts and properties of any subject, before you extend your thoughts to discourse of the particular kind or species of it.

3. Contemplate things first in their own simple natures, and afterwards view them in composition with other things; unless it be your present purpose to take a compound being to pieces, in order to find out, or to shew the nature of it, by searching and discovering of what simples it is composed.

4. Consider the absolute modes or affections of any being as it is in itself, before you proceed to consider it relatively, or to survey the various relations in which it stands to other beings, &c.

Note, These rules chiefly belong to the method of instruction which the learned call synthetick.

But in the regulation of our ideas, there is seldom an absolute necessity that we should place them in this or the other particular method: It is possible in some cases that many methods may be equally good, that is, may equally assist the understanding and the memory: To frame a method exquisitely accurate, according to the strict nature of things, and to maintain this accuracy from the beginning to the end of a treatise, is a most rare and difficult thing, if not impossible. But a larger account of method would be very improper in this place, lest we anticipate what belongs to the Fourth Part of Logick.

SECTION XII.

THESE FIVE RULES OF CONCEPTION EXEMPLIFIED.

IT may be useful here to give a specimen of the five special rules to direct our conceptions, which have been the chief subject of this long chapter, and represent them practically in one view.

Suppose the theme of our discourse were the passions of the mind.

First, To gain a clear and distinct idea of passion, we must define both the name and the thing.

To begin with the definition of the name. We are not here to understand the word passion in its vulgar and most limited sense, as it signifies merely anger or fury; nor do we take it in its most extensive philosophical sense, for the sustaining the action of an agent; but in the more limited philosophical sense, passions signify the various affections of the mind, such as admiration, love, or hatred: This is the definition of the name.

We proceed to the definition of the thing. Passion is defined a sensation of some special commotion in animal nature, occasioned by the mind's perception of some object suited to excite that commotion. Here* the genus, or general nature of passion, is a sensation of some special commotion in animal nature; and herein it agrees with hunger, thirst, pain, &c. The essential difference of it is, that this commotion arises from a thought or perception of the mind, and hereby it is distinguished from hunger, thirst, or pain.

Secondly, We must conceive of it completely, or survey the several parts that compose it. These are, 1. The mind's perception of some object. 2. The consequent ruffle, or special commotion of the nerves, and blood, and animal spirits. And 3. The sensation of this inward commotion.

Thirdly, We must consider it comprehensively, in its various properties. The most essential attributes that make up its nature have been already mentioned under the foregoing heads. Some of the most considerable properties that remain are these, namely, That passion belongs to all mankind, in greater or lesser degrees: It is not constantly present with us, but upon some certain occasions: It is appointed by our Creator for various useful ends and purposes, namely, to give us vigour in the pursuit of what is good and agreeable to us, or in the avoidance of what is hurtful: It is very proper for our state of trial in this world: It is not utterly to be rooted out of our nature, but to be moderated and governed according to the rules of virtue and religion, &c.

Fourthly, We must take cognizance of the various kinds of it, which is called an extensive conception of it. If the object which the mind perceives be very uncommon, it excites the passion of admiration: If the object appear agreeable, it raises love: If the agreeable object be absent and attainable, it is desire: If likely to be attained, it excites hope: If unattainable, despair: If it be present and possessed, it is the passion of joy: If lost, it excites sorrow: If the object be disagreeable, it causes in general hatred or aversion: If it be absent, and yet we are in danger of it, it raises our fear: If it be present, it is sorrow and sadness, &c.

Fifthly, All these things, and many more which go to compose a treatise on this subject must be placed in their proper order; a slight specimen of which is exhibited in this short account of passion, and which that admirable author Descartes has treated

* Since this was written, I have published a short Treatise of the Passions, wherein I have so far varied from this definition as to call them sensible commotions of our whole nature, both soul and body, occasioned by the mind's perception of some objects, &c. I made this alteration in the description of the passions in that book chiefly to include, in a more explicit manner, the passions of desire and aversion, which are acts of volition rather than sensations. Yet since some commotions of animal nature attend all the passions, and since there is always a sensation of these commotions, I shall not change the definition I have written here; for this will agree to all the passions, whether they include any act of volition or not; nor indeed is the matter of any great importance. Nov. 17, 1728.

of at large; though for want of sufficient experiments and observations in natural philosophy, there are some few mistakes in his account of animal nature.

SECTION XIII.

AN ILLUSTRATION OF THESE FIVE RULES BY SIMILITUDES.

THUS we have brought the First Part of Logick to a conclusion; and it may not be improper here to represent its excellencies, so far as we have gone, by general hints of its chief design and use, as well as by a various comparison of it to those instruments which mankind have invented for their several conveniences and improvements.

The design of Logick is not to furnish us with the perceiving faculty, but only to direct and assist us in the use of it: It doth not give us the objects of our ideas, but only casts such a light on those objects which nature furnishes us with, that they may be the more clearly and distinctly known: It doth not add new parts or properties to things, but it discovers the various parts, properties, relations and dependencies of one thing upon another, and by ranking all things under general and special heads, it renders the nature, or any of the properties, powers, and uses of a thing more easy to be found out, when we seek in what rank of beings it lies, and wherein it agrees with, and wherein it differs from others.

If any comparisons would illustrate this, it may be thus represented:

I. When Logick assists us to attain a clear and distinct conception of the nature of things by definition, it is like those glasses whereby we behold such objects distinctly, as by reason of their smallness, or their great distance, appear in confusion to the naked eye: So the telescope discovers to us distant wonders in the heavens, and shews the milky way, and the bright cloudy spots in a very dark sky, to be a collection of little stars, which the eye unassisted beholds in mingled confusion. So when bodies are too small for our sight to survey them distinctly, then the microscope is at hand for our assistance, to shew us all the limbs and features of the most minute animals, with great clearness and distinction.

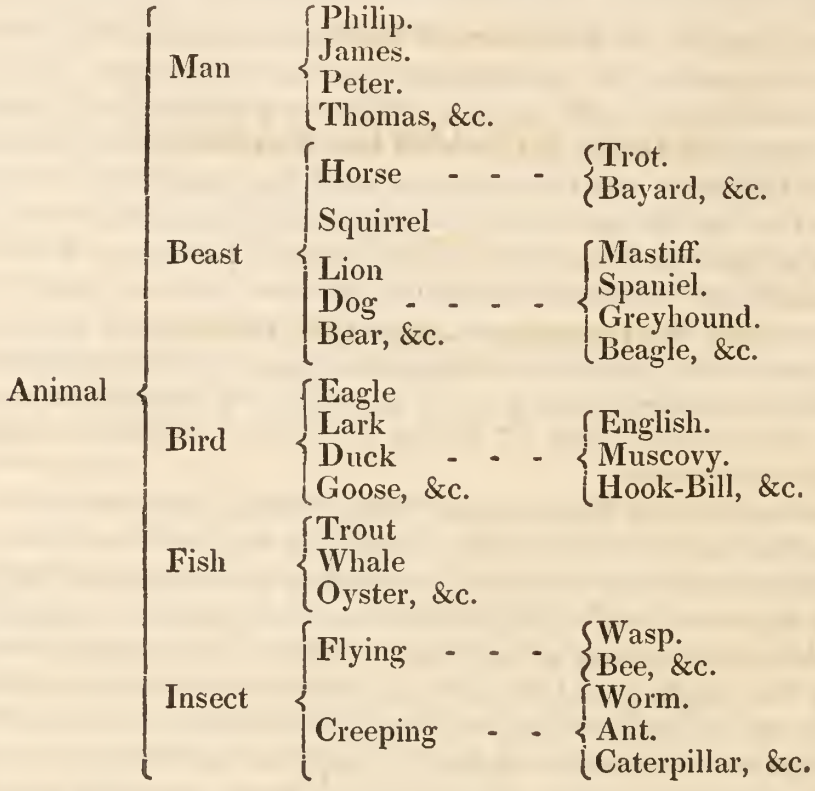
II. When we are taught by Logick to view a thing completely in all its parts, by the help of division, it has the use of an anatomical knife, which dissects an animal body, and separates the veins, arteries, nerves, muscles, membranes, &c. and shews us the several parts which go to the composition of a complete animal.

III. When Logick instructs us to survey an object comprehensively in all the modes, properties, relations, faces, and appearances of it, it is of the same use as a terrestrial globe, which turning round on its axis, represents to us all the variety of lands and seas, kingdoms and nations on the surface of the earth, in a very short succession of time, shews the situation and various relation of them to each other, and gives a comprehensive view of them in miniature.

IV. When this art teaches us to distribute any extensive idea into its different kinds or species, it may be compared to the prismatick glass, that receives the sun-beams or rays of light, which seem to be uniform when falling upon it, but it separates and distributes them into their different kinds and colours, and ranks them in their proper succession.

Or if we descend to subdivisions and subordinate ranks of being, then distribution

may also be said to form the resemblance of a natural tree, wherein the genus or general idea stands for the root or stock, and the several kinds or species, and individuals, are distributed abroad, and represented in their dependence and connection, like the several boughs, branches, and lesser shoots. For instance, let animal be the root of a logical tree, the resemblance is seen by mere inspection, though the root be not placed at the bottom of the page.



The same similitude will serve also to illustrate the division and subdivision of an integral whole into its several parts.

When Logick directs us to place all our ideas in a proper method, most convenient both for instruction and memory, it doth the same service as the cases of well contrived shelves in a large library, wherein folios, quartos, octavos, and lesser volumes, are disposed in such exact order under the particular heads of divinity, history, mathematics, ancient and miscellaneous learning, &c. that the student knows where to find every book, and has them all as it were within his command at once, because of the exact order wherein they are placed.

The man who has such assistances as these at hand, in order to manage his conceptions and regulate his ideas, is well prepared to improve his knowledge, and to join these ideas together in a regular manner by judgment, which is the second operation of the mind, and will be the subject of the Second Part of Logick.

LOGICK.

THE SECOND PART.

OF JUDGMENT AND PROPOSITION.

WHEN the mind has got acquaintance with things by framing ideas of them, it proceeds to the next operation, and that is, to compare these ideas together, and to join them by affirmation, or disjoin them by negation, according as we find them to agree or disagree. This act of the mind is called judgment; as when we have by perception obtained the ideas of Plato, a philosopher, man, innocent, we form these judgments; Plato was a philosopher; no man is innocent.

Some writers have asserted, that judgment consists in a mere perception of the agreement or disagreement of ideas. But I rather think there is an act of the will, at least in most cases, necessary to form a judgment; for though we do perceive or think we perceive ideas to agree or disagree, yet we may sometimes refrain from judging or assenting to the perception, for fear lest the perception should not be sufficiently clear, and we should be mistaken: And I am well assured at other times, that there are multitudes of judgments formed, and a firm assent given to ideas joined or disjoined, before there is any clear perception whether they agree or disagree; and this is the reason of so many false judgments or mistakes among men. Both these practices are a proof that judgment has something of the will in it, and does not merely consist in perception, since we sometimes judge, though unhappily, without perceiving, and sometimes we perceive without immediate judging.

As an idea is the result of our conception or apprehension, so a proposition is the effect of judgment. The foregoing sentences, which are examples of the act of judgment, are properly called propositions. Plato was a philosopher, &c.

Here let us consider:

1. The general nature of a proposition, and the parts of which it is composed.
2. The various divisions or kinds of propositions.
3. The springs of false judgment, or the doctrine of prejudices.
4. General directions to assist us in judging aright.
5. Special rules to direct us in judging particular objects.

CHAPTER I.

OF THE NATURE OF A PROPOSITION, AND ITS SEVERAL PARTS.

A PROPOSITION is a sentence wherein two or more ideas or terms are joined or disjoined by one affirmation or negation; as, Plato was a philosopher: Every angle is formed by two lines meeting: No man living on earth can be completely happy. When there are ever so many ideas or terms in the sentence, yet if they are joined or disjoined merely by one single affirmation or negation, they are properly called but one proposition, though they may be resolved into several propositions which are implied therein, as will appear hereafter.

In describing a proposition, I use the word terms as well as ideas, because when mere ideas are joined in the mind without words, it is rather called a judgment; but when clothed with words, it is called a proposition, even though it be in the mind only, as well as when it is expressed by speaking or writing.

There are three things which go to the nature and constitution of a proposition, namely, the subject, the predicate, and the copula.

The subject of a proposition is that concerning which any thing is affirmed or denied. So, Plato, angle, man living on earth, are the subjects of the foregoing propositions.

The predicate is that which is affirmed or denied of the subject; so philosopher is the predicate of the first proposition; formed by two lines meeting, is the predicate of the second; capable of being completely happy, is the proper predicate of the third.

The subject and predicate of a proposition taken together, are called the matter of it; for these are the materials of which it is made.

The copula is the form of a proposition; it represents the act of the mind affirming or denying, and it is expressed by the words, am, art, is, are, &c. or am not, art not, is not, are not, &c.

It is not a thing of importance enough to create a dispute, whether the words no, none, not, never, &c. which disjoin the idea or terms in a negative proposition, shall be called a part of the subject of the copula, or of the predicate. Sometimes perhaps they may seem most naturally to be included in one, and sometimes in another of these, though a proposition is usually denominated affirmative or negative from its copula, as hereafter.

Note 1. Where each of these parts of a proposition is not expressed distinctly in so many words, yet they are all understood, and implicitly contained therein; as, Socrates disputed, is a complete proposition, for it signifies Socrates was disputing. So, I die, signifies I am dying. I can write, that is, I am able to write. In Latin and Greek, one single word is many times a complete proposition.

Note 2. These words, am, art, is, &c. when they are used alone without any other predicate, signify both the act of the mind judging, which includes the copula, and signify also actual existence, which is the predicate of that proposition. So, Rome is, signifies Rome is existent: There are some strange monsters, that is, some strange monsters are existent: Carthage is no more, that is, Carthage has no being.

Note 3. The subject and predicate of a proposition are not always to be known and distinguished by the placing of the words in the sentence, but by reflecting duly on the sense of the words, and on the mind and design of the speaker or writer: As if I say, In Africa there are many lions, I mean many lions are existent in Africa: Many lions is the subject, and existent in Africa is the predicate. It is proper for a philosopher to understand geometry; here the word proper is the predicate, and all the rest is the subject, except is, the copula.

Note 4. The subject and predicate of a proposition ought always to be two different ideas, or two different terms; for where both the terms and ideas are the same, it is called an identical proposition, which is mere trifling, and cannot tend to promote knowledge; such as, A rule is a rule, or A good man is a good man.

But there are some propositions, wherein the terms of the subject and predicate seem to be the same; yet the ideas are not the same; nor can these be called purely identical or trifling propositions; such as, Home is home; that is, home is a convenient or delightful place: Socrates is Socrates still; that is, the man Socrates is still a philosopher: The hero was not a hero; that is, the hero did not shew his courage: What I have written I have written; that is, what I wrote I still approve, and will not alter it: What is done, is done; that is, it cannot be undone. It may be easily observed in these propositions the term is equivocal, for in the predicate it has a different idea from what it has in the subject.

There are also some propositions wherein the terms of the subject and predicate differ, but the ideas are the same; and these are not merely identical or trifling propositions; as, Impudent is shameless; A billow is a wave; or *Fluctus*, in Latin, is a wave; A globe is a round body. In these propositions either the words are explained by a definition of the name, or the ideas by a definition of the thing, and therefore they are by no means useless, when formed for this purpose.

CHAPTER II.

OF THE VARIOUS KINDS OF PROPOSITIONS.

PROPOSITIONS may be distributed into various kinds, according to their subject, their copula, their predicate, their nature or composition, their sense, and their evidence, which distributions will be explained in the following sections.

SECTION I.

OF UNIVERSAL, PARTICULAR, INDEFINITE, AND SINGULAR PROPOSITIONS.

PROPOSITIONS may be divided, according to their subject, into universal and particular; this is usually called a division arising from the quantity.

An universal proposition is when the subject is taken according to the whole of its extension; so if the subject be a genus, or general nature, it includes all its species or kinds: If the subject be a species, it includes all its individuals. This universality is

usually signified by these words, all, every, no, none, or the like; as, All men must die: No man is almighty: Every creature had a beginning.

A particular proposition is when the subject is not taken according to its whole extension; that is, when the term is limited and restrained to some one or more of those species or individuals, whose general nature it expresses, but reaches not to all; and this is usually denoted by the words, some, many, a few, there are, which, &c. as, Some birds can sing well: Few men are truly wise: There are parrots which will talk a hundred things.

Under the general name of universal propositions, we may justly include those that are singular, and for the most part those that are indefinite also.

A singular proposition is when the subject is a singular or individual term or idea; as, Descartes was an ingenious philosopher: Sir Isaac Newton has far exceeded all his predecessors: The palace at Hampton-Court is a pleasant dwelling: This day is very cold. The subject here must be taken according to the whole of its extension, because being an individual, it can extend only to one, and it must therefore be regulated by the laws of universal propositions.

An indefinite proposition is when no note, either of universality or particularity, is prefixed to a subject, which is in its own nature general; as, A planet is ever changing its place: Angels are noble creatures. Now this sort of proposition, especially when it describes the nature of things, is usually counted universal also, and it supposes the subject to be taken in its whole extension; for if there were any planet which did not change its place, or any angel that were not a noble creature, these propositions would not be strictly true.

Yet in order to secure us against mistakes in judging of universal, particular, and indefinite propositions, it is necessary to make these following remarks:

I. Concerning universal propositions.

Note 1. Universal terms may either denote a metaphysical, a physical, or a moral universality.

A metaphysical or mathematical universality is when all the particulars contained under any general idea have the same predicate belonging to them without any exception whatsoever; or when the predicate is so essential to the universal subject, that it destroys the very nature of the subject to be without it; as, All circles have a centre and circumference: All spirits in their own nature are immortal.

A physical or natural universality is when, according to the order and common course of nature, a predicate agrees to all the subjects of that kind, though there may be some accidental and preternatural exceptions; as, All men use words to express their thoughts, yet dumb persons are excepted, for they cannot speak. All beasts have four feet, yet there may be some monsters with five; or maimed, who have but three.

A moral universality is when the predicate agrees to the greatest part of the particulars which are contained under the universal subject; as, All negroes are stupid creatures: All men are governed by affection rather than by reason: All the old Romans loved their country: And the scripture uses this language, when St. Paul tells us, The Cretes are always liars.

Now it is evident, that a special or singular conclusion cannot be inferred from a moral universality, nor always and infallibly from a physical one, though it may be

always inferred from an universality which is metaphysical, without any danger or possibility of a mistake.

Let it be observed also, that usually we make little or no distinction in common language, between a subject that is physically or metaphysically universal.

Note 2. An universal term is sometimes taken collectively for all its particular ideas united together, and sometimes distributively, meaning each of them single and alone.

Instances of a collective universal are such as these: All these apples will fill a bushel: All the hours of the night are sufficient for sleep: All the rules of grammar overload the memory. In these propositions it is evident, that the predicate belongs not to the individuals separately, but to the whole collective idea; for we cannot affirm the same predicate if we change the word all into one or into every; we cannot say one apple or every apple will fill a bushel, &c. Now such a collective idea, when it becomes the subject of a proposition, ought to be esteemed as one single thing, and this renders the proposition singular or indefinite, as we shall shew immediately.

A distributive universal will allow the word all to be changed into every or into one, and by this means is distinguished from a collective.

Instances of a distributive universal are the most common on every occasion; as, All men are mortal: Every man is a sinner, &c. But in this sort of universal there is a distinction to be made, which follows in the next remark.

Note 3. When an universal term is taken distributively, sometimes it includes all the individuals contained in its inferior species: As when I say, Every sickness has a tendency to death; I mean every individual sickness, as well as every kind. But sometimes it includes no more than merely each species or kind; as when the Evangelist says, Christ healed every disease, or every disease was healed by Christ; that is, every kind of disease. The first of these, logicians call the distribution of an universal *in singula generum;* the last is a distribution *in genera singulorum.* But either of them joined to the subject render a proposition universal.

Note 4. The universality of a subject is often restrained by a part of the predicate; as when we say, All men learn wisdom by experience: The universal subject, all men, is limited to signify only all those men who learn wisdom. The scripture also uses this sort of language, when it speaks of all men being justified by the righteousness of one, Rom. v. 18. that is, all men who are justified obtain it this way.

Observe here, That not only a metaphysical or natural, but a moral universality also is oftentimes to be restrained by a part of the predicate; as when we say, All the Dutch are good seamen: All the Italians are subtle politicians; that is, those among the Dutch that are seamen are good seamen; and those among the Italians who are politicians, are subtle politicians, that is, they are generally so.

Note 5. The universality of a term is many times restrained by the particular time, place, circumstance, &c. or the design of the speaker; as if we were in the city of London, and say, All the weavers went to present their petition; we mean only all the weavers who dwell in the city. So when it is said in the gospel, All men did marvel, Mark v. 20. it reaches only to all those men who heard of the miracles of our Saviour.

Here also it should be observed, that a moral universality is restrained by time, place, and other circumstances, as well as a natural; so that by these means the word all sometimes does not extend to a tenth part of those who at first might seem to be included in that word.

One occasion of these difficulties and ambiguities that belong to universal propositions, is the common humour and temper of mankind, who generally have an inclination to magnify their ideas, and to talk roundly and universally concerning any thing they speak of; which has introduced universal terms of speech into custom and habit, in all nations, and all languages, more than nature or reason would dictate; yet when this custom is introduced, it is not at all improper to use this sort of language in solemn and sacred writings, as well as in familiar discourse.

II. Remarks concerning indefinite propositions.

Note 1. Propositions carrying in them universal forms of expression may sometimes drop the note of universality, and become indefinite, and yet retain the same universal sense, whether metaphysical, natural, or moral, whether collective or distributive.

We may give instances of each of these.

Metaphysical; as, A circle has a centre and circumference. Natural; as, Beasts have four feet. Moral; as, Negroes are stupid creatures. Collective; as, The apples will fill a bushel. Distributive; as, Men are mortal.

Note 2. There are many cases wherein a collective idea is expressed in a proposition by an indefinite term, and that where it describes the nature or quality of the subject, as well as when it declares some past matters of fact; as, Fir-trees set in good order will give a charming prospect; this must signify a collection of fir-trees, for one makes no prospect. In matters of fact this is more evident and frequent; as, The Romans overcame the Gauls: The robbers surrounded the coach: The wild geese flew over the Thames in the form of a wedge. All these are collective subjects.

Note 3. In indefinite propositions the subject is often restrained by the predicate, or by the special time, place, or circumstances, as well as in propositions which are expressly universal; as, The Chinese are ingenious silk-weavers; that is, those Chinese which are silk-weavers are ingenious at their work. The stars appear to us when the twilight is gone; this can signify no more than the stars which are above our horizon.

Note 4. All these restrictions tend to reduce some indefinite propositions almost into particular, as will appear under the next remarks.

III. Remarks concerning particular propositions.

Note 1. A particular proposition may sometimes be expressed indefinitely, without any note of particularity prefixed to the subject; as, In times of confusion laws are not executed: Men of virtue are disgraced, and murderers escape; that is, some laws, some men of virtue, some murderers: Unless we should call this language a moral universality, though I think it can hardly extend so far.

Note 2. The words some, a few, &c. though they generally denote a proper particularity, yet sometimes they express a collective idea; as, Some of the enemies beset the general around: A few Greeks would beat a thousand Indians.

I conclude this section with a few general remarks on this subject, namely:

General Remark I. Since universal, indefinite, and particular terms in the plural number may either be taken in a collective or distributive sense, there is one short and easy way to find when they are collective and when distributive, namely, If the plural number may be changed into the singular, that is, if the predicate will agree to one single subject, it is a distributive idea; if not, it is collective.

General Remark II. Universal and particular terms in the plural number, such as, all, some, few, many, &c. when they are taken in their distributive sense, represent

several single ideas; and when they are thus affixed to the subject of a proposition, render that proposition universal or particular, according to the universality or particularity of the terms affixed.

General Remark III. Universal and particular terms in the plural number, taken in their collective sense, represent generally one collective idea.

If this one collective idea be thus represented, whether by universal or particular terms, as the subject of a proposition which describes the nature of a thing, it properly makes either a singular or an indefinite proposition; for the words, all, some, a few, &c. do not then denote the quantity of the proposition, but are esteemed merely as terms which connect the individuals together in order to compose one collective idea. Observe these instances: All the sycamores in the garden would make a large grove; that is, this one collection of sycamores, which is a singular idea. Some of the sycamores in the garden would make a fine grove. Sycamores would make a noble grove: In these last the subject is rather indefinite than singular. But it is very evident, that in each of these propositions the predicate can only belong to a collective idea, and therefore the subject must be esteemed a collective.

If this collective idea, whether represented by universal or particular terms, be used in describing past matters of fact, then it is generally to be esteemed a singular idea, and renders the proposition singular; as, All the soldiers of Alexander made but a little army: A few Macedonians vanquished the large army of Darius: Some grenadiers in the camp plundered all the neighbouring towns.

Now we have shewn before, that if a proposition describing the nature of things has an indefinite subject, it is generally to be esteemed universal in its propositional sense: And if it has a singular subject, in its propositional sense it is always ranked with universals.

After all, we must be forced to confess, that the language of mankind, and the idioms of speech, are so exceeding various, that it is hard to reduce them to a few rules; and if we would gain a just and precise idea of every universal, particular, and indefinite expression, we must not only consider the peculiar idiom of the language, but the time, the place, the occasion, the circumstances of the matter spoken of, and thus penetrate as far as possible into the design of the speaker or writer.

SECTION II.

OF AFFIRMATIVE AND NEGATIVE PROPOSITIONS.

WHEN a proposition is considered with regard to its copula, it may be divided into affirmative and negative; for it is the copula joins or disjoins the two ideas. Others call this a division of propositions according to their quality.

An affirmative proposition is when the idea of the predicate is supposed to agree to the idea of the subject, and is joined to it by the word is, or are, which is the copula; as, All men are sinners. But when the predicate is not supposed to agree with the subject, and is disjoined from it by the particles is not, are not, &c. the proposition is negative; as, Man is not innocent; or, No man is innocent. In an affirmative proposition, we assert one thing to belong to another, and, as it were, unite them in thought and word: In negative propositions, we separate one thing from another, and deny their agreement.

It may seem something odd, that two ideas or terms are said to be disjoined as well as joined by a copula: But if we can but suppose the negative particles do really belong to the copula of negative propositions, it takes away the harshness of the expression; and to make it yet softer, we may consider that the predicate and subject may be properly said to be joined in a form of words as a proposition, by connective particles in grammar or logick, though they are disjoined in their sense and signification. Every youth who has learned his grammar, knows there are such words as disjunctive conjunctions.

Several things are worthy our notice on this subject.

Note 1. As there are some terms, or words, and ideas, as I have shewn before, concerning which it is hard to determine whether they are negative or positive, so there are some propositions concerning which it may be difficult to say, whether they affirm or deny: As, when we say, Plato was no fool: Cicero was no unskilful orator: Cæsar made no expedition to Muscovy: An oyster has no part like an eel: It is not necessary for a physician to speak French, and for a physician to speak French is needless. The sense of these propositions is very plain and easy, though logicians might squabble perhaps a whole day, whether they should rank them under the names of negative or affirmative.

Note 2. In Latin and English two negatives joined in one sentence make an affirmative; as when we declare, No man is not mortal; it is the same as though we said, Man is mortal. But in Greek, and oftentimes in French, two negatives make but a stronger denial.

Note 3. If the mere negative term, not, be added to the copula of an universal affirmative proposition, it reduces it to a particular negative; as, All men are not wise, signifies the same as, Some men are not wise.

Note 4. In all affirmative propositions, the predicate is taken in its whole comprehension; that is, every essential part and attribute of it is affirmed concerning the subject; as when I say, A true Christian is an honest man, every thing that belongs to honesty is affirmed concerning a true Christian.

Note 5. In all negative propositions the predicate is taken in its whole extension; that is, every species and individual that is contained in the general idea of the predicate, is utterly denied concerning the subject: So in this proposition, A spirit is not an animal, we exclude all sorts and kinds, and particular animals whatsoever from the idea of a spirit.

From these two last remarks we may derive this inference, that we ought to attend to the entire comprehension of our ideas, and to the universal extension of them, as far as we have proper capacity for it, before we grow too confident in our affirming or denying any thing which may have the least darkness, doubt, or difficulty attending it: It is the want of this attention that betrays us into many mistakes.

SECTION III.

OF THE OPPOSITION AND CONVERSION OF PROPOSITIONS.

ANY two ideas being joined or disjoined in various forms will afford us several propositions: All these may be distinguished according to their quantity and their quality* into four, which are marked or denoted by the letters A, E, I, O, thus:

A, E, I, O denotes a { Universal Affirmative. / Universal Negative. / Particular Affirmative. / Particular Negative.

according to these old Latin rhymes—

Asserit A, *negat* E, *verùm generaliter ambæ.*
Asserit I, *negat* O, *sed particulariter ambo.*

This may be exemplified by these two ideas, a vine and a tree.

A Every vine is a tree.
E No vine is a tree.
I Some vine is a tree.
O Some vine is not a tree.

The logicians of the schools have written many large trifles concerning the opposition and conversion of propositions. It will be sufficient here to give a few brief hints of these things, that the learner may not be utterly ignorant of them.

Propositions which are made of the same subject and predicate are said to be opposite, when that which is denied in one is affirmed in the other, either in whole or in part, without any consideration whether the propositions be true or no.

If they differ both in quantity and quality they are called contradictory; as,

A Every vine is a tree.
O Some vine is not a tree. } These can never be both true, or both false at the same time.

If two universals differ in quality they are contraries; as

A Every vine is a tree.
E No vine is a tree. } These can never be both true together, but they may be both false.

If two particular propositions differ in quality they are subcontraries; as,

I Some vine is a tree.
O Some vine is not a tree. } These may be both true together, but they can never be both false.

* The reader should remember here, that a proposition according to its quantity is called universal or particular; and according to its quality it is either affirmative or negative.

Both particular and universal propositions which agree in quality, but not in quantity, are called subaltern, though these are not properly opposite; as,

A Every vine is a tree.
I Some vine is a tree.

Or thus:

E No vine is a tree.
O Some vine is not a tree.

The canons of subaltern propositions are usually reckoned these three, namely, 1. If an universal proposition be true, the particular will be true also, but not on the contrary. And, 2. If a particular proposition be false, the universal must be false too, but not on the contrary. 3. Subaltern propositions, whether universal or particular, may sometimes be both true and sometimes both false.

The conversion of propositions is when the subject and predicate change their places with preservation of the truth. This may be done with constant certainty in all universal negatives and particular affirmatives; as, No spirit is an animal, may be converted, No animal is a spirit; and Some tree is a vine, may be converted, Some vine is a tree. But there is more of formal trifling in this sort of discourse than there is of solid improvement, because this sort of conversion arises merely from the form of words, as connected in a proposition, rather than from the matter.

Yet it may be useful to observe, that there are some propositions, which by reason of the ideas or matter of which they are composed, may be converted with constant truth: Such are those propositions whose predicate is a nominal or real definition of the subject, or the difference of it, or a property of the fourth kind, or a superlative degree of any property or quality whatsoever; or, in short, wheresover the predicate and the subject have exactly the same extension, or the same comprehension; as, Every vine is a tree bearing grapes; and, Every tree bearing grapes is a vine: Religion is the truest wisdom; and, The truest wisdom is religion: Julius Cæsar was the first emperor of Rome; and, The first emperor of Rome was Julius Cæsar. These are the propositions which are properly convertible, and they are called reciprocal propositions.

SECTION IV.

OF PURE AND MODAL PROPOSITIONS.

Another division of propositions among the scholastick writers is into pure and modal. This may be called, for distinction sake, a division according to the predicate.

When a proposition merely expresses that the predicate is connected with the subject, it is called a pure proposition; as, Every true Christian is an honest man: But when it includes also the way and manner wherein the predicate is connected with the subject, it is called a modal proposition; as, when I say, It is necessary that a true Christian should be an honest man.

Logical writers generally make the modality of this proposition to belong to the copula, because it shews the manner of the connection between subject and predicate. But if the form of the sentence as a logical proposition be duly considered,

the mode itself is the very predicate of the proposition, and it must run thus: That a true Christian should be an honest man is a necessary thing, and then the whole primary proposition is included in the subject of the modal proposition.

There are four modes of connecting the predicate with the subject, which are usually reckoned upon this occasion, namely, necessity and contingency, which are two opposites; possibility and impossibility, which are also opposites; as, It is necessary that a globe should be round: That a globe be made of wood or glass, is an unnecessary or contingent thing: It is impossible that a globe should be square: It is possible that a globe may be made of water.

With regard to the modal propositions which the schools have introduced, I would make these two remarks:

I. These propositions in English are formed by the resolution of the words, must be, might not be, can be, and cannot be, into those more explicate forms of a logical copula and predicate, is necessary, is contingent, is possible, is impossible: For it is necessary that a globe should be round, signifies no more than that a globe must be round.

II. Let it be noted, that this quadruple modality is only an enumeration of the natural modes or manners wherein the predicate is connected with the subject: We might also describe several moral and civil modes of connecting two ideas together, namely, lawfulness and unlawfulness, conveniency and inconveniency, &c. whence we may form such modal propositions as these: It is unlawful for any person to kill an innocent man: It is lawful for Christians to eat flesh in Lent: To tell all that we think is inexpedient: For a man to be affable to his neighbour is very convenient, &c.

There are several other modes of speaking whereby a predicate is connected with a subject; such as, it is certain, it is doubtful, it is probable, it is improbable, it is agreed, it is granted, it is said by the ancients, it is written, &c. all which will form other kinds of modal propositions.

But whether the modality be natural, moral, &c. yet in all these propositions it is the mode is the proper predicate, and all the rest of the proposition, except the copula, or word is, belongs to the subject; and thus they become pure propositions of a complex nature, of which we shall treat in the next section; so that there is no great need of making modals a distinct sort.

There are many little subtleties which the schools acquaint us with concerning the conversion and opposition and equipollence of these modal propositions, suited to the Latin or Greek tongues, rather than the English, and fit to pass away the idle time of a student, rather than to enrich his understanding.

SECTION V.

OF SINGLE PROPOSITIONS, WHETHER SIMPLE OR COMPLEX.

When we consider the nature of propositions, together with the formation of them, and the materials whereof they are made, we divide them into single and compound.

A single proposition is that which has but one subject and one predicate; but if it has more subjects, or more predicates, it is called a compound proposition, and indeed it contains two or more propositions in it.

A single proposition, which is also called categorical, may be divided again into simple and complex.*

A purely simple proposition is that whose subject and predicate are made up of single terms; as, Virtue is desirable: Every penitent is pardoned: No man is innocent.

When the subject or predicate, or both, are made up of complex terms, it is called a complex proposition; as, Every sincere penitent is pardoned: Virtue is desirable for its own sake: No man alive is perfectly innocent.

If the term which is added to the subject of a complex proposition be either essential or any way necessary to it, then it is called explicative, for it only explains the subject; as, Every mortal man is a son of Adam. But if the term added to make up the complex subject does not necessarily or constantly belong to it, then it is determinative, and limits the subject to a particular part of its extension; as, Every pious man shall be happy. In the first proposition the word mortal is merely explicative; in the second proposition the word pious is determinative.

Here note, That whatsoever may be affirmed or denied concerning any subject, with an explicative addition, may be also affirmed or denied of that subject without it; as we may boldly say, Every man is a son of Adam, as well as every mortal man: But it is not so, where the addition is determinative, for we cannot say, Every man shall be happy, though every pious man shall be so.

In a complex proposition the predicate or subject is sometimes made complex by the pronouns, who, which, whose, to whom, &c. which make another proposition; as, Every man who is pious shall be saved: Julius, whose surname was Cæsar, overcame Pompey: Bodies, which are transparent, have many pores. Here the whole proposition is called the primary or chief, and the additional proposition is called an incident proposition. But it is still to be esteemed in this case merely as a part of the complex term; and the truth or falsehood of the whole complex proposition is not to be judged by the truth or falsehood of the incident proposition, but by the connection of the whole subject with the predicate. For the incident proposition may be false, and absurd, or impossible, and yet the whole complex proposition may be true; as, A horse which has wings might fly over the Thames.

Besides this complexion which belongs to the subject or predicate, logical writers use to say, there is a complexion which may fall upon the copula also; but this I have accounted for in the section concerning modal propositions; and indeed it is not of much importance whether it were placed there or here.

SECTION VI.

OF COMPOUND PROPOSITIONS.

A COMPOUND proposition is made up of two or more subjects or predicates, or both; and it contains in it two or more propositions, which are either plainly expressed, or concealed and implied.

* As simple ideas are opposed to complex, and single ideas to compound, so propositions are distinguished in the same manner: The English tongue in this respect having some advantage above the learned languages, which have no usual word to distinguish single from simple.

The first sort of compound propositions are those wherein the composition is expressed and evident, and they are distinguished into these six kinds, namely, copulative, disjunctive, conditional, causal, relative, and discretive.

I. Copulative propositions are those which have more subjects or predicates connected by affirmative or negative conjunctions; as, Riches and honours are temptations to pride: Cæsar conquered the Gauls and the Britons: Neither gold nor jewels will purchase immortality. These propositions are evidently compounded, for each of them may be resolved into two propositions, namely, Riches are temptations to pride; and Honour is a temptation to pride; and so the rest.

The truth of copulative propositions depends upon the truth of all the parts of them; for if Cæsar had conquered the Gauls and not the Britons, or the Britons and not the Gauls, the second copulative proposition had not been true.

Here note, Those propositions, which cannot be resolved into two or more simple propositions, are not properly copulative, though two or more ideas be connected and coupled by such conjunctions, either in the subject or predicate; as, Two and three make five: Majesty and meekness do not often meet: The sun, moon, and stars are not all to be seen at once. Such propositions are to be esteemed merely complex, because the predicate cannot be affirmed of each single subject, but only of all of them together as a collective subject.

II. Disjunctive propositions are when the parts are disjoined or opposed to one another by disjunctive particles; as, It is either day or night: The weather is either shining or rainy: Quantity is either length, breadth, or depth.

The truth of disjunctives depends on the necessary and immediate opposition of the parts; therefore only the last of these examples is true; but the two first are not strictly true, because twilight is a medium between day and night; and dry cloudy weather is a medium between shining and raining.

III. Conditional or hypothetical propositions are those whose parts are united by the conditional particle if; as, If the sun be fixed, the earth must move: If there be no fire, there will be no smoke.

Note, The first part of these propositions, or that wherein the condition is contained, is called the antecedent, the other is called the consequent.

The truth of these propositions depends not at all on the truth and falsehood of their two parts, but on the truth of the connection of them; for each part of them may be false, and yet the whole proposition true; as, If there be no providence, there will be no future punishment.

IV. Causal propositions are where two propositions are joined by causal particles; as, Houses were not built that they might be destroyed: Rehoboam was unhappy because he followed evil counsel.

The truth of a causal proposition arises not from the truth of the parts, but from the causal influence that the one part of it has upon the other; for both parts may be true, yet the proposition false, if one part be not the cause of the other.

Some logicians refer reduplicative propositions to this place; as, Men, considered as men, are rational creatures, that is, because they are men.

V. Relative propositions have their parts joined by such particles as express a relation or comparison of one thing to another; as, When you are silent, I will speak: As

much as you are worth, so much you shall be esteemed: As is the father, so is the son: Where there is no tale-bearer, contention will cease.

These are very much akin to conditional propositions, and the truth of them depends upon the justness of their connection.

VI. Discretive propositions are such wherein various and seemingly opposite judgments are made, whose variety or distinction is noted by the particles but, though, yet, &c. as, Travellers may change their climate, but not their temper: Job was patient, though his grief was great.

The truth and goodness of a discretive proposition depends on the truth of both parts, and their contrary distinction to one another; for though both parts should be true, yet if there be no seeming opposition between them, it is an useless assertion, though we cannot call it a false one; as, Descartes was a philosopher, yet he was a Frenchman: The Romans were valiant, but they spoke Latin; both which propositions are ridiculous for want of a seeming opposition between the parts.

Since we have declared wherein the truth and falsehood of these compound propositions consist, it is proper also to give some intimations how any of these propositions, when they are false, may be opposed or contradicted.

All compound propositions, except copulatives and discretives, are properly denied or contradicted when the negation affects their conjunctive particles; as, if the disjunctive proposition asserts, It is either day or night; the opponent says, It is not either day or night; or, It is not necessary that it should be either day or night: So the hypothetical proposition is denied by saying, It does not follow that the earth must move if the sun be fixed.

A disjunctive proposition may be contradicted also by denying all the parts; as, It is neither day nor night.

And a causal proposition may be denied or opposed indirectly and improperly, when either part of the proposition is denied; and it must be false if either part be false: But the design of the proposition being to shew the causal connection of the two parts, each part is supposed to be true, and it is not properly contradicted as a causal proposition, unless one part of it be denied to be the cause of the other.

As for copulatives and discretives, because their truth depends more on the truth of their parts, therefore these may be opposed or denied, as many ways as the parts of which they are composed may be denied; so this copulative proposition, Riches and honour are temptations to pride, may be denied by saying, Riches are not temptations, though honour may be; or, Honour is not a temptation, though riches may be; or, Neither riches nor honour are temptations, &c.

So this discretive proposition, Job was patient, though his grief was great, is denied by saying, Job was not patient, though his grief was great; or, Job was patient, but his grief was not great; or, Job was not patient, nor was his grief great.

We proceed now to the second sort of compound propositions, namely, such whose composition is not expressed, but latent or concealed; yet a small attention will find two propositions included in them. Such are these that follow:

1. Exclusives; as, The pious man alone is happy. It is only Sir Isaac Newton could find out true philosophy.

2. Exceptives; as, None of the ancients but Plato well defended the soul's immortality. The Protestants worship none but God.

3. Comparatives; as, Pain is the greatest affliction. No Turk was fiercer than the Spaniards at Mexico.

Here note, That the comparative degree does not always imply the positive; as if I say, A fool is better than a knave, this does not affirm that folly is good, but that it is a less evil than knavery.

4. Inceptives and decitives, which relate to the beginning or ending of any thing; as, The Latin tongue is not yet forgotten. No man before Orpheus wrote Greek verse. Peter Czar of Muscovy began to civilize his nation.

To these may be added continuatives; as, Rome remains to this day, which includes at least two propositions, namely, Rome was, and Rome is.

Here let other authors spend time and pains in giving the precise definitions of all these sorts of propositions, which may be as well understood by their names and examples: Here let them tell what their truth depends upon, and how they are to be opposed or contradicted; but a moderate share of common sense, with a review of what is said on the former compounds, will suffice for all these purposes, without the formality of rules.

SECTION VII.

OF TRUE AND FALSE PROPOSITIONS.

PROPOSITIONS are next to be considered according to their sense or signification, and thus they are distributed into true and false. A true proposition represents things as they are in themselves; but if things are represented otherwise than they are in themselves, the proposition is false.

Or we may describe them more particularly thus: A true proposition joins those ideas and terms together whose objects are joined and agree, or it disjoins those ideas and terms whose objects disagree or are disjoined; as, Every bird has wings: A brute is not immortal.

A false proposition joins those ideas or terms whose objects disagree, or it disjoins those whose objects agree; as, Birds have no wings: Brutes are immortal.

Note, It is impossible that the same proposition should be both true and false at the same time, in the same sense, and in the same respect; because a proposition is but the representation of the agreement or disagreement of things; now it is impossible that the same thing should be and not be, or that the same thing should agree and not agree, at the same time and in the same respect. This is a first principle of human knowledge.

Yet some propositions may seem to contradict one another, though they may be both true, but in different senses, or respects, or times; as, Man was immortal in Paradise, and, Man was mortal in paradise. But these two propositions must be referred to different times; as, Man before his fall was immortal, but at the fall he became mortal. So we may say now, Man is mortal, or, Man is immortal, if we take these propositions in different respects; as, Man is an immortal creature as to his soul, but mortal as to his body. A great variety of difficulties and seeming contradictions, both in holy scripture and other writings, may be solved and explained in this manner.

The most important question on this subject is this, What is the criterion, or distinguishing mark of truth? How shall we know when a proposition is really true or false?

There are so many disguises of truth in the world, so many false appearances of truth, that some sects have declared there is no possibility of distinguishing truth from falsehood; and therefore they have abandoned all pretences to knowledge, and maintain strenuously that nothing is to be known.

The first men of this humour made themselves famous in Greece by the name of Scepticks, that is, Seekers: They were also called Academicks, borrowing their name from Academia, their school, or place of study. They taught that all things are uncertain, though they allowed that some are more probable than others. After these arose the sect of Pyrrhonicks, so named from Pyrrho their master, who would not allow one proposition to be more probable than another; but professed that all things were equally uncertain. Now all these men, as an ingenious author expresses it, were rather to be called a sect of liars than philosophers, and that censure is just for two reasons: 1. Because they determined concerning every proposition that it was uncertain, and believed that as a certain truth, while they professed there was nothing certain, and that nothing could be determined concerning truth or falsehood; and thus their very doctrine gave itself the lie. 2. Because they judged and acted as other men did in the common affairs of life; they would neither run into fire nor water, though they professed ignorance and uncertainty, whether the one would burn, or the other drown them.

There have been some in all ages who have too much affected this humour, who dispute against every thing, under pretence that truth hath no certain mark to distinguish it. Let us therefore enquire what is the general criterion of truth? And in order to this it is proper to consider what is the reason why we assent to those propositions which contain the most certain and indubitable truths; such as these, The whole is greater than a part; Two and three make five.

The only reason why we believe these propositions to be true, is because the ideas of the subjects and predicates appear with so much clearness and strength of evidence to agree to each other, that the mind cannot help discerning the agreement, and cannot doubt of the truth of them, but is constrained to judge them true. So when we compare the ideas of a circle and a triangle, or the ideas of an oyster and a butterfly, we see such an evident disagreement between them, that we are sure that a butterfly is not an oyster; nor is a triangle a circle. There is nothing but the evidence of the agreement or disagreement between two ideas, that makes us affirm or deny the one or the other.

Now it will follow from hence, that a clear and distinct perception, or full evidence of the agreement and disagreement of our ideas to one another, or to things, is a certain criterion of truth: For since our minds are of such a make, that where the evidence is exceeding plain and strong, we cannot withhold our assent; we should then be necessarily exposed to believe falsehood, if complete evidence should be found in any propositions that are not true. But surely the God of perfect wisdom, truth, and goodness, would never oblige his creatures to be thus deceived; and therefore he would never have constituted us of such a frame as would render it naturally impossible to guard against error.

Another consequence is naturally derived from the former; and that is, that the only reason why we fall into mistake, is because we are impatient to form a judgment of things before we have a clear and evident perception of their agreement or disagree-

ment; and if we will make haste to judge while our ideas are obscure and confused, or before we see whether they agree or disagree, we shall plunge ourselves into perpetual errors. See more on this subject in an *Essay on the Freedom of Will in God and Man:* Published in 1732. Section I. page 13.

Note, What is here asserted concerning the necessity of clear and distinct ideas refers chiefly to propositions which we form ourselves by our own powers: As for propositions which we derive from the testimony of others, they will be accounted for in Chap. IV.

SECTION VIII.

OF CERTAIN AND DUBIOUS PROPOSITIONS OF KNOWLEDGE AND OPINION.

SINCE we have found that evidence is the great criterion, and the sure mark of truth; this leads us directly to consider propositions according to their evidence; and here we must take notice both of the different degrees of evidence, and the different kinds of it.

Propositions, according to their different degrees of evidence, are distinguished into certain and dubious.*

Where the evidence of the agreement or disagreement of the ideas is so strong and plain, that we cannot forbid nor delay our assent, the proposition is called certain; as, Every circle hath a centre; The world did not create itself. An assent to such propositions is honoured with the name of knowledge.

But when there is any obscurity upon the agreement or disagreement of the ideas, so that the mind does not clearly perceive it, and is not compelled to assent or dissent, then the proposition, in a proper and philosophical sense, is called doubtful or uncertain; as, The planets are inhabited; The souls of brutes are mere matter; The world will not stand a thousand years longer; Dido built the city of Carthage, &c. Such uncertain propositions are called opinions.

When we consider ourselves as philosophers, or searchers after truth, it would be well if we always suspended a full judgment or determination about any thing, and made farther enquiries, where this plain and perfect evidence is wanting; but we are so prone of ourselves to judge without full evidence, and in some cases the necessity of action in the affairs of life constrains us to judge and determine upon a tolerable degree of evidence, that we vulgarly call those propositions certain, where we have but very little room or reason to doubt of them, though the evidence be not complete and resistless.

Certainty, according to the schools, is distinguished into objective and subjective. Objective certainty, is when the proposition is certainly true in itself; and subjective, when we are certain of the truth of it. The one is in things, the other is in our minds.

* It may be objected, that this certainty and uncertainty being only in the mind, the division belongs to propositions rather according to the degrees of our assent, than the degrees of evidence. But it may well be answered, that the evidence here intended is that which appears so to the mind, and not the mere evidence in the nature of things: Besides, as we shall shew immediately, the degree of assent ought to be exactly proportionable to the degree of evidence; and therefore the difference is not great, whether propositions be called certain or uncertain, according to the measure of evidence, or of assent.

But let it be observed here, that every proposition in itself is certainly true or certainly false. For though doubtfulness or uncertainty seems to be a medium between certain truth and certain falsehood in our minds, yet there is no such medium in things themselves, no, not even in future events: For now at this time it is certain in itself, that midsummer-day seven years hence will be serene, or it is certain it will be cloudy, though we are uncertain and utterly ignorant what sort of day it will be: This certainty of distant futurity is known to God only.

Uncertain or dubious propositions, that is, opinions, are distinguished into probable, or improbable.

When the evidence of any proposition is greater than the evidence of the contrary, then it is a probable opinion: Where the evidence and arguments are stronger on the contrary side, we call it improbable. But while the arguments on either side seem to be equally strong, and the evidence for and against any proposition appears equal to the mind, then, in common language we call it a doubtful matter. We also call it a dubious or doubtful proposition, when there are no arguments on either side; as, Next Christmas-day will be a very sharp frost. And in general, all those propositions are doubtful, wherein we can perceive no sufficient marks or evidences of truth or falsehood. In such a case, the mind which is searching for truth ought to remain in a state of doubt or suspence, until superior evidence on one side or the other incline the balance of the judgment, and determine the probability or certainty to the one side.

A great many propositions which we generally believe or disbelieve in human affairs, or in the sciences, have very various degrees of evidence, which yet arise not to complete certainty, either of truth or falsehood. Thus it comes to pass that there are such various and almost infinite degrees of probability and improbability. To a weak probability we should give a weak assent; and a stronger assent is due where the evidence is greater, and the matter more probable. If we proportion our assent in all things to the degrees of evidence, we do the utmost that human nature is capable of in a rational way to secure itself from error.

SECTION IX.

OF SENSE, CONSCIOUSNESS, INTELLIGENCE, REASON, FAITH, AND INSPIRATION.

AFTER we have considered the evidence of propositions in the various degrees of it, we come to survey the several kinds of evidence, or the different ways whereby truth is let into the mind, and which produce accordingly several kinds of knowledge. We shall distribute them into these six, namely, sense, consciousness, intelligence, reason, faith, and inspiration; and then distinguish the propositions which are derived from them.

I. The evidence of sense is, when we frame a proposition according to the dictate of any of our senses; so we judge that grass is green; that a trumpet gives a pleasant sound; that fire burns wood, water is soft, and iron is hard; for we have seen, heard, or felt all these. It is upon this evidence of sense, that we know and believe the daily occurrences in human life; and almost all the histories of mankind that are written by eye or ear-witnesses, are built upon this principle.

Under the evidence of sense we do not only include that knowledge which is derived

to us by our outward senses of hearing, seeing, feeling, tasting and smelling; but that also which is derived from the inward sensations and appetites of hunger, thirst, ease, pleasure, pain, weariness, rest, &c. and all those things which belong to the body; as, Hunger is a painful appetite; Light is pleasant; Rest is sweet to the weary limbs.

Propositions which are built on this evidence, may be named sensible propositions, or the dictates of sense.

II. As we learn what belongs to the body by the evidence of sense, so we learn what belongs to the soul by an inward consciousness, which may be called a sort of internal feeling, or spiritual sensation of what passes in the mind; as, I think before I speak; I desire large knowledge; I suspect my own practice; I studied hard to-day; My conscience bears witness of my sincerity; My soul hates vain thoughts; Fear is an uneasy passion; Long meditation on one thing is tiresome.

Thus it appears that we obtain the knowledge of a multitude of propositions, as well as of single ideas, by those two principles which Mr. Locke calls sensation and reflection: One of them is a sort of consciousness of what affects the body, and the other is a consciousness of what passes in the mind.

Propositions which are built on this internal consciousness, have yet no particular or distinguished name assigned to them.

III. Intelligence relates chiefly to those abstracted propositions which carry their own evidence with them, and admit no doubt about them. Our perception of this self-evidence in any proposition is called intelligence. It is our knowledge of those first principles of truth which are, as it were, wrought into the very nature and make of our minds: They are so evident in themselves to every man who attends to them, that they need no proof. It is the prerogative and peculiar excellence of these propositions, that they can scarce ever be proved or denied: They cannot easily be proved, because there is nothing supposed to be more clear or certain, from which an argument may be drawn to prove them. They cannot well be denied, because their own evidence is so bright and convincing, that as soon as the terms are understood, the mind necessarily assents; such are these, Whatsoever acteth hath a being; Nothing has no properties; A part is less than the whole; Nothing can be the cause of itself.

These propositions are called axioms, or maxims, or first principles; these are the very foundations of all improved knowledge and reasonings, and on that account these have been thought to be innate propositions, or truths born with us.

Some suppose that a great part of the knowledge of angels and human souls in the separate state is obtained in this manner, namely, by such an immediate view of things in their own nature, which is called intuition.

IV. Reasoning is the next sort of evidence, and that is, when one truth is inferred or drawn from others by natural and just methods of argument; as, If there be much light at midnight, I infer, it proceeds from the moon; because the sun is under the earth*. If I see a cottage in a forest, I conclude, some man has been there and built it. Or when I survey the heavens and earth, this gives evidence to my reason, that there is a God who made them.

* *Note,* Since this book was written, we have so many appearances of the *aurora borealis* as reduces this inference only to a probability.

The propositions which I believe upon this kind of evidence, are called conclusions, or rational truths; and the knowledge that we gain this way is properly called science.

Yet let it be noted, that the word science is usually applied to a whole body of regular or methodical observations or propositions, which learned men have formed concerning any subject of speculation, deriving one truth from another by a train of arguments. If this knowledge chiefly directs our practice, it is usually called an art. And this is the most remarkable distinction between an art and a science, namely, the one refers chiefly to practice, the other to speculation. Natural philosophy, or physicks, and ontology, are sciences; logick and rhetoric are called arts; but mathematics include both art and science; for they have much of speculation, and much of practice in them.

Observe here, That when the evidence of a proposition derived from sense, consciousness, intelligence, or reason, is firm and indubitable, it produces such assent as we call a natural certainty.

V. When we derive the evidence of any proposition from the testimony of others, it is called the evidence of faith; and this is a large part of our knowledge. Ten thousand things there are which we believe merely upon the authority or credit of those who have spoken or written of them. It is by this evidence that we know there is such a country as China, and there was such a man as Cicero who dwelt in Rome. It is by this that most of the transactions in human life are managed: We know our parents and our kindred by this means, we know the persons and laws of our present governors, as well as things that are at a vast distance from us in foreign nations, or in ancient ages.

According as the persons that inform us of any thing are many or few, or more or less wise, and faithful, and credible, so our faith is more or less firm or wavering, and the proposition believed is either certain or doubtful; but in matters of faith, an exceeding great probability is called a moral certainty.

Faith is generally distinguished into divine and human, not with regard to the propositions that are believed, but with regard to the testimony upon which we believe them. When God reveals any thing to us, this gives us the evidence of divine faith; but what man only acquaints us with, produces a human faith in us; the one being built upon the word of man, arises but to moral certainty; but the other being founded on the word of God, arises to an absolute and infallible assurance, so far as we understand the meaning of this word. This is called supernatural certainty.

Propositions which we believe upon the evidence of human testimony, are called narratives, relations, reports, historical observations, &c. but such as are built on divine testimony, are termed matters of revelation; and if they are of great importance in religion, they are called articles of faith.

There are some propositions or parts of knowledge, which are said to be derived from observation and experience, that is, experience in ourselves, and the observations we have made on other persons or things; but these are made up of some of the former springs of knowledge joined together, namely, sense, consciousness, reason, faith, &c. and therefore are not reckoned a distinct kind of evidence.

VI. Inspiration is a sort of evidence distinct from all the former, and that is, when such an overpowering impression of any proposition is made upon the mind by God himself, that gives a convincing and indubitable evidence of the truth and divinity of it: So were the prophets and the apostles inspired*.

* *Note here,* I speak chiefly of the highest kind of inspiration.

Sometimes God may have been pleased to make use of the outward senses, or the inward workings of the imagination, of dreams, apparitions, visions and voices, or reasoning, or perhaps human narration, to convey divine truths to the mind of the prophet; but none of these would be sufficient to deserve the name of inspiration, without a superior or divine light and power attending them.

This sort of evidence is also very distinct from what we usually call divine faith; for every common Christian exercises divine faith when he believes any proposition which God has revealed in the Bible upon this account, because God has said it, though it was by a train of reasonings that he was led to believe that this is the word of God: Whereas in the case of inspiration, the prophet not only exercises divine faith, in believing what God reveals, but he is under a superior heavenly impression, light, and evidence, whereby he is assured that God reveals it. This is the most eminent kind of supernatural certainty.

Though persons might be assured of their own inspiration, by some peculiar and inexpressible consciousness of this divine inspiration and evidence in their own spirits, yet it is hard to make out this inspiration to others, and to convince them of it, except by some antecedent or consequent prophecies or miracles, or some public appearances more than human.

The propositions which are attained by this sort of evidence are called inspired truths. This is divine revelation at first hand, and the dictates of God in an immediate manner, of which theological writers discourse at large: But since it belongs only to a few favourites of heaven to be inspired, and not the bulk of mankind, it is not necessary to speak more of it in a treatise of logick, which is designed for the general improvement of human reason.

The various kinds of evidence upon which we believe any proposition, afford us these three remarks:

I. The same proposition may be known to us by different kinds of evidence: That the whole is bigger than a part is known by our senses, and it is known by the self-evidence of the thing to our mind. That God created the heavens and the earth is known to us by reason, and is known also by divine testimony or faith.

II. Among those various kinds of evidence, some are generally stronger than others in their own nature, and give a better ground for certainty. Inward consciousness and intelligence, as well as divine faith and inspiration, usually carry much more force with them than sense or human faith, which are often fallible; though there are instances wherein human faith, sense, and reasoning, lay a foundation also for complete assurance, and leave no room for doubt.

Reason in its own nature would always lead us into the truth in matters within its compass, if it were used aright, or it would require us to suspend our judgment where there is want of evidence. But it is our sloth, precipitancy, sense, passion, and many other things, that lead our reason astray in this degenerate and imperfect state: Hence it comes to pass that we are guilty of so many errors in reasoning, especially about divine things, because our reason either is busy to enquire, and resolved to determine about matters that are above our present reach; or because we mingle many prejudices and secret influences of sense, fancy, passion, inclination, &c. with our exercises of reason, and judge and determine according to these irregular instances.

Divine faith would never admit of any controversies or doubtings, if we were but assured that God had spoken, and that we rightly understood his meaning.

III. The greatest evidence and certainty of any proposition does not depend upon the variety of the ways or kinds of evidence, whereby it is known, but rather upon the strength and degree of evidence, and the clearness of light in or by which it appears to the mind. For a proposition that is known only one way may be much more certain, and have stronger evidence than another that is supposed to be known many ways. Therefore these propositions, Nothing has no properties; Nothing can make itself; which are known only by intelligence, are much surer and truer than this proposition, The rainbow has real and inherent colours in it; or than this, The sun rolls round the earth; though we seem to know both these last by our senses, and by the common testimony of our neighbours. So any proposition that is clearly evident to our own consciousness, or divine faith, is much more certain to us than a thousand others that have only the evidence of feeble and obscure sensations, of mere probable reasonings and doubtful arguments, or the witness of fallible men, or even though all these should join together.

CHAPTER III.

THE SPRINGS OF FALSE JUDGMENT, OR THE DOCTRINE OF PREJUDICES.

INTRODUCTION.

IN the end of the foregoing chapter, we have surveyed the several sorts of evidence on which we build our assent to propositions. These are indeed the general grounds upon which we form our judgments concerning things. What remains in this Second Part of Logick, is to point out the several springs and causes of our mistakes in judging, and to lay down some rules by which we should conduct ourselves in passing a judgment on every thing that is proposed to us.

I confess many things which will be mentioned in these following chapters, might be as well referred to the Third Part of Logick, where we shall treat of reasoning and argument; for most of our false judgments seem to include a secret bad reasoning in them; and while we shew the springs of error, and the rules of true judgment, we do at the same time discover which arguments are fallacious, which reasonings are weak, and which are just and strong. Yet since this is usually called a judging ill, or judging well, I think we may without any impropriety treat of it here; and this will lay a surer foundation for all sorts of ratiocination and argument.

Rash judgments are called prejudices, and so are the springs of them. This word in common life signifies an ill opinion which we have conceived of some other person, or some injury done to him. But when we use the word in matters of science, it signifies a judgment that is formed concerning any person or thing before sufficient examination; and generally we suppose it to mean a false judgment, or mistake: At least, it is an opinion taken up without solid reason for it, or an assent given to a proposition before we have just evidence of the truth of it, though the thing itself may happen to be true.

Sometimes these rash judgments are called prepossessions; whereby is meant, that

some particular opinion has possessed the mind, and engaged the assent, without sufficient search or evidence of the truth of it.

There is a vast variety of these prejudices and prepossessions, which attend mankind in every age and condition of life; they lay the foundations of many an error, and many an unhappy practice, both in the affairs of religion, and in our civil concernments, as well as in matters of learning. It is necessary for a man who pursues truth to enquire into these springs of error, that as far as possible he may rid himself of old prejudices, and watch hourly against new ones.

The number of them is so great, and they are so interwoven with each other, as well as with the powers of human nature, that it is sometimes hard to distinguish them apart; yet for method sake we shall reduce them to these four general heads, namely, prejudices arising from things, or from words, from ourselves, or from other persons; and after the description of each prejudice, we shall propose one or more ways of curing it.

SECTION I.

PREJUDICES ARISING FROM THINGS.

THE first sort of prejudices are those which arise from the things themselves about which we judge. But here let it be observed, that there is nothing in the nature of things that will necessarily lead us into error, if we do but use our reason aright, and withhold our judgment till there appear sufficient evidence of truth. But since we are so unhappily prone to take advantage of every doubtful appearance and circumstance of things to form a wrong judgment, and plunge ourselves into mistake, therefore it is proper to consider what there is in the things themselves that may occasion our errors.

1. The obscurity of some truths, and the difficulty of searching them out, is one occasion of rash and mistaken judgment.

Some truths are difficult because they lie remote from the first principles of knowledge, and want a long chain of argument to come at them: Such are many of the deep things of algebra and geometry, and some of the theorems and problems of most parts of the mathematics. Many things also in natural philosophy are dark and intricate upon this account, because we cannot come at any certain knowledge of them without the labour of many and difficult, as well as chargeable experiments.

There are other truths which have great darkness upon them, because we have no proper means or mediums to come at the knowledge of them. Though in our age we have found out many of the deep things of nature by the assistance of glasses and other instruments; yet we are not hitherto arrived at any sufficient methods to discover the shapes of those little particles of matter which distinguish the several sapours, odours, and colours of bodies; nor to find what sort of atoms compose liquids or solids, and distinguish wood, minerals, metals, glass, stone, &c. There is a darkness also lies upon the actions of the intellectual or angelical world; their manners of subsistence and agency, the power of spirits to move bodies, and the union of our souls with this animal body of ours, are much unknown to us on this account.

Now in many of these cases, a great part of mankind is not content to be entirely ignorant; but they rather choose to form rash and hasty judgments, to guess at things

without just evidence, to believe something concerning them before they can know them: And thereby they fall into error.

This sort of prejudice, as well as most others, is cured by patience and diligence in enquiry and reasoning, and a suspension of judgment, till we have attained some proper mediums of knowledge, and till we see sufficient evidence of the truth.

II. The appearance of things in a disguise, is another spring of prejudice, or rash judgment. The outside of things, which first strikes us, is oftentimes different from their inward nature; and we are tempted to judge suddenly according to outward appearances. If a picture is daubed with many bright and glaring colours, the vulgar eye admires it as an excellent piece; whereas the same person judges very contemptuously of some admirable design, sketched out only with a black pencil on a coarse paper, though by the hand of Raphael. So the scholar spies the name of a new book in a public newspaper; he is charmed with the title, he purchases, he reads with huge expectations, and finds it all trash and impertinence: This is a prejudice derived from the appearance; we are too ready to judge that volume valuable which hath so good a frontispiece. The large heap of encomiums and swelling words of assurance that are bestowed on quack medicines in public advertisements tempt many a reader to judge them infallible, and to use the pills or the plaster with vast hope and frequent disappointment.

We are tempted to form our judgment of persons as well as things by these outward appearances. Where there is wealth, equipage, and splendour, we are ready to call that man happy; but we see not the vexing disquietudes of his soul: And when we spy a person in ragged garments, we form a despicable opinion of him too suddenly; we can hardly think him either happy or wise, our judgment is so strangely biassed by outward and sensible things. It was through the power of this prejudice that the Jews rejected our blessed Saviour; they could not suffer themselves to believe that the man who appeared as the son of a carpenter was also the Son of God. And because St. Paul was of little stature, a mean presence, and his voice contemptible, some of the Corinthians were tempted to doubt whether he was inspired or no.

This prejudice is cured by a longer acquaintance with the world, and a just observation that things are sometimes better, and sometimes worse than they appear to be. We ought therefore to restrain our excessive forwardness to form our opinion of persons or things before we have opportunity to search into them more perfectly. Remember that a grey beard does not make a philosopher; all is not gold that glitters; and a rough diamond may be worth an immense sum.

III. A mixture of different qualities in the same thing, is another temptation to judge amiss. We are ready to be carried away by that quality which strikes the first or the strongest impressions upon us, and we judge of the whole object according to that quality, regardless of all the rest; or sometimes we colour over all the other qualities with that one tincture, whether it be bad or good.

When we have just reason to admire a man for his virtues, we are sometimes inclined not only to neglect his weaknesses, but even to put a good colour upon them, and to think them amiable. When we read a book that has many excellent truths in it and divine sentiments, we are tempted to approve not only that whole book, but even all the writings of that author. When a poet, an orator, or a painter, has performed admirably

in several illustrious pieces, we sometimes also admire his very errors, we mistake his blunders for beauties, and are so ignorantly fond as to copy after them.

It is this prejudice that has rendered so many great scholars perfect bigots, and inclined them to defend Homer or Horace, Livy or Cicero, in their mistakes, and vindicate all the follies of their favourite author. It is this that tempts some great writers to support the sayings of almost all the ancient fathers of the church, and admire them even in their very reveries.

On the other hand, if an author has professed heretical sentiments in religion, we throw our scorn upon every thing he writes, we despise even his critical or mathematical learning, and will hardly allow him common sense. If a poem has some blemishes in it, there is a set of false critics who decry it universally, and will allow no beauties there.

This sort of prejudice is relieved by learning to distinguish things well, and not to judge in the lump. There is scarce any thing in the world of nature or art, in the world of morality or religion, that is perfectly uniform. There is a mixture of wisdom and folly, vice and virtue, good and evil, both in men and things. We should remember that some persons have great wit and little judgment; others are judicious, but not witty. Some are good humoured without compliment; others have all the formalities of complaisance, but no good humour. We ought to know that one man may be vicious and learned, while another has virtue without learning. That many a man thinks admirably well, who has a poor utterance; while others have a charming manner of speech, but their thoughts are trifling and impertinent. Some are good neighbours, and courteous, and charitable towards men, who have no piety towards God; others are truly religious, but of morose natural tempers. Some excellent sayings are found in very silly books, and some silly thoughts appear in books of value. We should neither praise nor dispraise by wholesale, but separate the good from the evil, and judge of them apart: The accuracy of a good judgment consists much in making such distinctions.

Yet let it be noted too, that in common discourse we usually denominate persons and things according to the major part of their character. He is to be called a wise man who has but a few follies: He is a good philosopher who knows much of nature, and for the most part reasons well in matters of human science; and that book should be esteemed well written, which has more of good sense in it than it has of impertinence.

IV. Though a thing be uniform in its own nature, yet the different lights in which it may be placed, and the different views in which it appears to us, will be ready to excite in us mistaken judgments concerning it. Let an erect cone be placed in a horizontal plane, at a great distance from the eye, and it appears a plain triangle; but we shall judge that very cone to be nothing but a flat circle, if its base be obverted towards us. Set a common round plate a little obliquely before our eyes afar off, and we shall think it an oval figure: But if the very edge of it be turned towards us, we shall take it for a straight line. So when we view the several folds of a changeable silk, we pronounce this part red and that yellow, because of its different position to the light, though the silk laid smooth in one light appears all of one colour.

When we survey the miseries of mankind, and think of the sorrows of millions, both on earth and in hell, the divine government has a terrible aspect, and we may be tempted

to think hardly even of God himself: But if we view the profusion of his bounty and grace amongst his creatures on earth, or the happy spirits in heaven, we shall have so exalted an idea of his goodness as to forget his vengeance. Some men dwell entirely upon the promises of his gospel, and think him all mercy: Others, under a melancholy frame, dwell upon his terrors and his threatenings, and are overwhelmed with the thought of his severity and vengeance, as though there were no mercy in him.

The true method of delivering ourselves from this prejudice is to view a thing on all sides, to compare all the various appearances of the same thing with one another, and let each of them have its full weight in the balance of our judgment, before we fully determine our opinion. It was by this means that the modern astronomers came to find out that the planet Saturn hath a flat broad circle round its globe, which is called its ring, by observing the different appearances as a narrow or a broader oval, or as it sometimes seems to be, a straight line, in the different parts of its twenty-nine years revolution through the ecliptic. And if we take the same just and religious survey of the great and blessed God in all the discoveries of his vengeance and his mercy, we shall at last conclude him to be both just and good.

V. The casual association of many of our ideas becomes the spring of another prejudice or rash judgment, to which we are sometimes exposed. If in our younger years we have taken medicines that have been nauseous, when any medicine whatsoever is afterwards proposed to us under sickness, we immediately judge it nauseous; our fancy has so closely joined these ideas together, that we know not how to separate them: Then the stomach feels the disgust, and perhaps refuses the only drug that can preserve life. So a child who has been let blood joins the ideas of pain and the surgeon together, and he hates the sight of the surgeon, because he thinks of his pain; or if he has drunk a bitter potion, he conceives a bitter idea of the cup which held it, and will drink nothing out of that cup.

It is for the same reason that the bulk of the common people are so superstitiously fond of the psalms translated by Hopkins and Sternhold, and think them sacred and divine, because they have been now for more than an hundred years bound up in the same covers with our Bibles.

The best relief against this prejudice of association is to consider whether there be any natural and necessary connection between those ideas, which fancy, custom, or chance hath thus joined together; and if nature has not joined them, let our judgment correct the folly of our imagination, and separate these ideas again.

SECTION II.

PREJUDICES ARISING FROM WORDS.

OUR ideas and words are so linked together, that while we judge of things according to words, we are led into several mistakes. These may be distributed under two general heads, namely, such as arise from single words or phrases, or such as arise from words joined in speech, and composing a discourse.

I. The most eminent and remarkable errors of the first kind are these three. 1. When our words are insignificant, and have no ideas: As when the mystical divines talk of the prayer of silence, the supernatural and passive night of the soul, the vacuity of

powers, the suspension of all thoughts: Or, 2. When our words are equivocal, and signify two or more ideas, as the words law, light, flesh, spirit, righteousness, and many other terms in scripture: Or, 3. When two or three words are synonymous, and signify one idea, as regeneration and new creation in the New Testament; both which mean only a change of the heart from sin to holiness; or as the elector of Cologn and the bishop of Cologn are two titles of the same man.

These kinds of phrases are the occasion of various mistakes; but none so unhappy as those in theology: For both words without ideas, as well as synonymous and equivocal words, have been used and abused by the humours, passions, interests, or by the real ignorance and weakness of men, to beget terrible contests among Christians.

But to relieve us under all those dangers, and to remove these sorts of prejudices which arise from single words or phrases, I must remit the reader to Part I. Chap. IV. where I have treated about words, and to those directions which I have given concerning the definition of names, Part I. Chap. VI. Sect. 3.

II. There is another sort of false judgments or mistakes which we are exposed to by words, and that is, when they are joined in speech, and compose a discourse; and here we are in danger two ways.

The one is, when a man writes good sense, or speaks much to the purpose, but has not a happy and engaging manner of expression. Perhaps he uses coarse and vulgar words, or old, obsolete, and unfashionable language, or terms and phrases that are foreign, latinized, scholastic, very uncommon, and hard to be understood: And this is still worse, if his sentences are long and intricate, or the sound of them harsh and grating to the ear. All these indeed are defects in style, and lead some nice and unthinking hearers or readers into an ill opinion of all that such a person speaks or writes. Many an excellent discourse of our forefathers has had abundance of contempt cast upon it by our modern pretenders to sense, for want of their distinguishing between the language and the ideas.

On the other hand, when a man of eloquence speaks or writes upon any subject we are too ready to run into his sentiments, being sweetly and insensibly drawn by the smoothness of his harangue, and the pathetic power of his language. Rhetoric will varnish every error, so that it shall appear in the dress of truth, and put such ornaments upon vice as to make it look like virtue: It is an art of wondrous and extensive influence; it often conceals, obscures, or overwhelms the truth, and places sometimes a gross falsehood in a most alluring light. The decency of action, the music of the voice, the harmony of the periods, the beauty of the style, and all the engaging airs of the speaker, have often charmed the hearers into error, and persuaded them to approve whatsoever is proposed in so agreeable a manner. A large assembly stands exposed at once to the power of these prejudices, and imbibes them all. So Cicero and Demosthenes made the Romans and the Athenians believe almost whatsoever they pleased.

The best defence against both these dangers, is to learn the skill, as much as possible, of separating our thoughts and ideas from words and phrases; to judge of the things in their own natures, and in their natural or just relation to one another, abstracted from the use of language; and to maintain a steady and obstinate resolution to hearken to nothing but truth, in whatsoever style or dress it appears.

Then we shall hear a sermon of pious and just sentiments with esteem and reverence,

though the preacher has but an unpolished style, and many defects in the manner of his delivery. Then we shall neglect and disregard all the flattering insinuations whereby the orator would make way for his own sentiments to take possession of our souls, if he has not solid and instructive sense equal to his language. Oratory is a happy talent when it is rightly employed to excite the passions to the practice of virtue and piety; but to speak properly, this art has nothing to do in the search after truth.

SECTION III.

PREJUDICES ARISING FROM OURSELVES.

Neither words nor things would so often lead us astray from truth, if we had not within ourselves such springs of error as these that follow:

I. Many errors are derived from our weakness of reason, and incapacity to judge of things in our infant state. These are called the prejudices of infancy. We frame early mistakes about the common objects which surround us, and the common affairs of life: We fancy the nurse is our best friend, because children receive from their nurses their food and other conveniencies of life. We judge that books are very unpleasant things, because perhaps we have been driven to them by the scourge. We judge also that the sky touches the distant hills, because we cannot inform ourselves better in childhood. We believe the stars are not risen till the sun is set, because we never see them by day. But some of these errors may seem to be derived from the next spring.

The way to cure the prejudices of infancy is to distinguish, as far as we can, which are those opinions which we framed in perfect childhood; to remember that at the time our reason was incapable of forming a right judgment, and to bring these propositions again to be examined at the bar of mature reason.

II. Our senses give us many a false information of things, and tempt us to judge amiss. This is called the prejudice of sense; as when we suppose the sun and moon to be flat bodies, and to be but a few inches broad, because they appear so to the eye. Sense inclines us to judge that air has no weight, because we do not feel it press heavy upon us; and we judge also by our senses, that cold and heat, sweet and sour, red and blue, &c. are such real properties in the objects themselves, and exactly like those sensations which they excite in us.

Note, Those mistakes of this sort which all mankind drop and lose in their advancing age, are called mere prejudices of infancy; but those which abide with the vulgar part of the world, and generally with all men, till learning and philosophy cure them, more properly attain the name of prejudices of sense.

These prejudices are to be removed several ways. 1. By the assistance of one sense we cure the mistakes of another; as when a stick thrust into the water seems crooked, we are prevented from judging it to be really so in itself, for when we take it out of the water, both our sight and our feeling agree and determine it to be straight. 2. The exercise of our reason, and an application to mathematical and philosophical studies, cures many other prejudices of sense, both with relation to the heavenly and earthly bodies. 3. We should remember that our senses have often deceived us in various instances, that they give but a confused and imperfect representation of things in many cases, that they often represent falsely those very objects to which they seem to be suited,

such as the shape, motion, size, and situation, of gross bodies, if they are but placed at a distance from us; and as for the minute particles of which bodies are composed, our senses cannot distinguish them. 4. We should remember also, that one prime and original design of our senses is, to inform us what various relations the bodies that are round about us bear to our animal body, and to give us notice what is pleasant and useful, or what is painful and injurious to us; but they are not sufficient of themselves to lead us into a philosophical acquaintance with the inward nature of things. It must be confessed, it is by the assistance of the eye and the ear especially, which are called the senses of discipline, that our minds are furnished with various parts of knowledge, by reading, hearing, and observing things divine and human; yet reason ought always to accompany the exercise of our senses, whenever we would form a just judgment of things proposed to our enquiry.

Here it is proper to observe also, that as the weakness of reason in our infancy, and the dictates of our senses, sometimes in advancing years, lead the wiser part of mankind astray from truth; so the meaner parts of our species, persons whose genius is very low, whose judgment is always weak, who are ever indulging the dictates of sense and humour, are but children of a larger size, they stand exposed to everlasting mistakes in life, and live and die in the midst of prejudices.

III. Imagination is another fruitful spring of false judgments. Our imagination is nothing else but the various appearances of our sensible ideas in the brain, where the soul frequently works in uniting, disjoining, multiplying, magnifying, diminishing, and altering the several shapes, colours, sounds, motions, words, and things, that have been communicated to us by the outward organs of sense. It is no wonder therefore if fancy leads us into many mistakes, for it is but sense at second hand. Whatever is strongly impressed upon the imagination, some persons believe to be true. Some will choose a particular number in a lottery, or lay a large wager on a single chance of a die, and doubt not of success, because their fancy feels so powerful an impression, and assures them it will be prosperous. A thousand pretended prophecies and inspirations, and all the freaks of enthusiasm, have been derived from this spring. Dreams are nothing else but the deceptions of fancy: A delirium is but a short wildness of the imagination; and a settled irregularity of fancy is distraction and madness.

One way to gain a victory over this unruly faculty is to set a watch upon it perpetually, and to bridle it in all its extravagancies; never to believe any thing merely because fancy dictates it, any more than I would believe a midnight-dream, nor to trust fancy any farther than it is attended with severe reason. It is a very useful and entertaining power of human nature in matters of illustration, persuasion, oratory, poesy, wit, conversation, &c. but in the calm enquiry after truth, and the final judgment of things, fancy should retire, and stand aside, unless it be called in to explain or illustrate a difficult point by a similitude.

Another method of deliverance from these prejudices of fancy, is to compare the ideas that arise in our imaginations with the real nature of things, as often as we have occasion to judge concerning them; and let calm and sedate reason govern and determine our opinions; though fancy should show never so great a reluctance. Fancy is the inferior faculty, and it ought to obey.

IV. The various passions or affections of the mind are numerous and endless springs of prejudice. They disguise every object they converse with, and put their own colours

upon it, and thus lead the judgment astray from truth. It is love that makes the mother think her own child the fairest, and will sometimes persuade us that a blemish is beauty. Hope and desire make an hour of delay seem as long as two or three hours; hope inclines us to think there is nothing too difficult to be attempted; despair tells us that a brave attempt is mere rashness, and that every difficulty is insurmountable. Fear makes us imagine that a bush shaken with the wind has some savage beast in it, and multiplies the dangers that attend our path; but still there is a more unhappy effect of fear when it keeps millions of souls in slavery to the errors of an established religion: What could persuade the wise men and philosophers of a popish country to believe the gross absurdities of the Romish church, but the fear of torture or death, the gallies or the inquisition? Sorrow and melancholy tempt us to think our circumstances much more dismal than they are, that we may have some excuse for mourning: And envy represents the condition of our neighbour better than it is, that there may be some pretence for her own vexation and uneasiness. Anger, and wrath, and revenge, and all those hateful passions, excite in us far worse ideas of men than they deserve, and persuade us to believe all that is ill of them. A detail of the evil influence of the affections of the mind upon our judgment, would make a large volume.

The cure of these prejudices is attained by a constant jealousy of ourselves, and watchfulness over our passions, that they may never interpose when we are called to pass a judgment of any thing: And when our affections are warmly engaged, let us abstain from judging. It would be also of great use to us to form our deliberate judgments of persons and things in the calmest and serenest hours of life, when the passions of nature are all silent, and the mind enjoys its most perfect composure: And these judgments so formed should be treasured up in the mind, that we might have recourse to them in hours of need. See many more sentiments and directions relating to this subject, in my Doctrine of the Passions.

V. The fondness we have for self, and the relation which other persons and things have to ourselves, furnish us with another long list of prejudices. This indeed might be reduced to the passion of self-love, but it is so copious a head that I choose to name it as a distinct spring of false judgments. We are generally ready to fancy every thing of our own has something peculiarly valuable in it, when indeed there is no other reason but because it is our own. Were we born among the gardens of Italy, the rocks of Switzerland, or the ice and snows of Russia and Sweden, still we should imagine peculiar excellencies in our native land. We conceive a good idea of the town and village where we first breathed, and think the better of a man for being born near us. We entertain the best opinion of the persons of our own party, and easily believe evil reports of persons of a different sect or faction. Our own sex, our kindred, our houses, and our very names, seem to have something good and desirable in them. We are ready to mingle all these with ourselves, and cannot bear to have others think meanly of them.

So good an opinion have we of our own sentiments and practices, that it is very difficult to believe what a reprover says of our conduct: And we are as ready to assent to all the language of flattery. We set up our own opinions in religion and philosophy as the tests of orthodoxy and truth; and we are prone to judge every practice of other men either a duty or a crime, which we think would be a crime or a duty in us, though their circumstances are vastly different from our own. This humour prevails sometimes to such a degree, that we would make our own taste and inclination the standard by

which to judge of every dish of meat that is set upon the table, every book in a library, every employment, study and business of life, as well as every recreation.

It is from this evil principle of setting up self for a model what other men ought to be, that the antichristian spirit of imposition and persecution had its original: Though there is no more reason for it than there was for the practice of that tyrant, who having a bed fit for his own size, was reported to stretch men of low stature upon the rack, till they were drawn out to the length of his bed; and some add also that he cut off the legs of any whom he found too long for it.

It is also from a principle near akin to this, that we pervert and strain the writings of many venerable authors, and especially the sacred books of scripture, to make them speak our own sense. Through the influence which our own schemes or hypotheses have upon the mind, we sometimes become so sharp-sighted as to find these schemes in those places of scripture where the holy writers never thought of them, nor the Holy Spirit intended them. At other times, this prejudice brings such a dimness upon the sight, that we cannot read any thing that opposes our own scheme, though it be written as with sun-beams, and in the plainest language; and perhaps we are in danger in such a case of winking a little against the light.

We ought to bring our minds free, unbiassed, and teachable, to learn our religion from the word of God; but we have generally formed all the lesser as well as the greater points of our religion beforehand, and then we read the prophets and apostles only to pervert them to confirm our own opinions. Were it not for this influence of self, and a bigotry to our own tenets, we could hardly imagine that so many strange, absurd, inconsistent, wicked, mischievous, and bloody principles, should pretend to support and defend themselves by the gospel of Christ.

Every learned critic has his own hypothesis; and if the common text be not favourable to his opinion, a various lection shall be made authentic. The text must be supposed to be defective or redundant, and the sense of it shall be literal, or metaphorical, according as it best supports his own scheme. Whole chapters or books shall be added or left out of the sacred canon, or be turned into parables by this influence. Luther knew not well how to reconcile the epistle of St. James to the doctrine of justification by faith alone, and so he could not allow it to be divine. The papists bring all the apocrypha into their Bible, and stamp divinity upon it: For they can fancy purgatory is there, and they find prayers for the dead. But they leave out the second commandment, because it forbids the worship of images. Others suppose the Mosaic history of the creation, and the fall of man, to be oriental ornaments, or a mere allegory, because the literal sense of those three chapters of Genesis do not agree with their theories. Even an honest, plain-hearted, and unlearned Christian is ready to find something in every chapter of the Bible to countenance his own private sentiments; but he loves those chapters best which speak his own opinions plainest: This is a prejudice that sticks very close to our natures; the scholar is infested with it daily, and the mechanic is not free.

Self has yet a farther and a more pernicious influence upon our understandings, and is an unhappy guide in the search after truth. When our own inclination or our ease, our honour or our profit, tempts us to the practice of any thing of suspected lawfulness, how do we strain our thoughts to find arguments for it, and persuade ourselves it is

lawful? We colour over iniquity and sinful compliance with the names of virtue and innocence, or at least of constraint and necessity. All the different and opposite sentiments and practices of mankind are too much influenced by this mean bribery, and give too just occasion for satirical writers to say, that self-interest governs all mankind.

When the judge had awarded due damages to a person into whose field a neighbour's oxen had broke, it is reported that he reversed his own sentence, when he heard that the oxen which had done this mischief were his own. Whether this be a history or a parable, it is still a just representation of the wretched influence of self to corrupt the judgment.

One way to amend this prejudice, is to thrust self so far out of the question that it may have no manner of influence whensoever we are called to judge and consider the naked nature, truth, and justice of things. In matters of equity between man and man, our Saviour has taught us an effectual means of guarding against this prejudice, and that is, to put my neighbour in the place of myself, and myself in the place of my neighbour, rather than be bribed by this corrupt principle of self-love to do injury to our neighbours. Thence arises that golden rule of dealing with others as we would have others deal with us.

In the judgment of truth and falsehood, right and wrong, good and evil, we ought to consider that every man has a self as well as we; and that the tastes, passions, inclinations, and interests of different men are very different, and often contrary, and that they dictate contrary things: Unless therefore all manner of different and contrary propositions could be true at once, self can never be a just test or standard of truth and falsehood, good and evil.

VI. The tempers, humours, and peculiar turns of the mind, whether they be natural or acquired, have a great influence upon our judgment, and become the occasion of many mistakes. Let us survey a few of them.

1. Some persons are of an easy and credulous temper, while others are perpetually discovering a spirit of contradiction. The credulous man is ready to receive every thing for truth, that has but a shadow of evidence; every new book that he reads, and every ingenious man with whom he converses, has power enough to draw him into the sentiments of the speaker or writer. He has so much complaisance in him, or weakness of soul, that he is ready to resign his own opinion to the first objection which he hears, and to receive any sentiments of another that are asserted with a positive air and much assurance. Thus he is under a kind of necessity, through the indulgence of this credulous humour, either to be often changing his opinions, or to believe inconsistencies.

The man of contradiction is of a contrary humour, for he stands ready to oppose every thing that is said; he gives a slight attention to the reasons of other men, from an inward scornful presumption that they have no strength in them. When he reads or hears a discourse different from his own sentiments, he does not give himself leave to consider whether that discourse may be true; but employs all his powers immediately to confute it. Your great disputers and your men of controversy are in continual danger of this sort of prejudice: They contend often for victory, and will maintain whatsoever they have asserted, while truth is lost in the noise and tumult of reciprocal contradictions; and it frequently happens, that a debate about opinions is turned into a mutual reproach of persons.

The prejudice of credulity may in some measure be cured, by learning to set a high value on truth, and by taking more pains to attain it; remembering that truth oftentimes lies dark and deep, and requires us to dig for it as hid treasure; and that falsehood often puts on a fair disguise, and therefore we should not yield up our judgment to every plausible appearance. It is no part of civility or good breeding to part with truth, but to maintain it with decency and candour.

A spirit of contradiction is so pedantic and hateful, that a man should take much pains with himself to watch against every instance of it: He should learn so much good humour, at least, as never to oppose any thing without just and solid reason for it: He should abate some degrees of pride and moroseness, which are never-failing ingredients in this sort of temper; and should seek after so much honesty and conscience, as never to contend for conquest or triumph; but to review his own reasons, and to read the arguments of his opponents, if possible, with an equal indifferency, and be glad to spy truth, and to submit to it, though it appear on the opposite side.

2. There is another pair of prejudices, derived from two tempers of mind near akin to those I have just mentioned; and these are the dogmatical and the sceptical humour, that is, always positive, or always doubting.

By what means soever the dogmatist came by his opinions, whether by his senses or by his fancy, his education or his own reading, yet he believes them all with the same assurance that he does a mathematical truth; he has scarce any mere probabilities that belong to him; every thing with him is certain and infallible; every punctilio in religion is an article of his faith, and he answers all manner of objections by a sovereign contempt.

Persons of this temper are seldom to be convinced of any mistake: A full assurance of their own notions makes all the difficulties on their own side vanish so entirely, that they think every point of their belief is written as with sun-beams, and wonder any one should find a difficulty in it. They are amazed that learned men should make a controversy of what is to them so perspicuous and indubitable. The lowest rank of people, both in learned and in vulgar life, is very subject to this obstinacy.

Scepticism is a contrary prejudice. The dogmatist is sure of every thing, and the sceptic believes nothing. Perhaps he has found himself often mistaken in matters of which he thought himself well assured in his younger days, and therefore he is afraid to give assent to any thing again. He sees so much show of reason for every opinion, and so many objections also arising against every doctrine, that he is ready to throw off the belief of every thing: He renounces at once the pursuit of truth, and contents himself to say, there is nothing certain. It is well, if through the influence of such a temper he does not cast away his religion as well as his philosophy, and abandon himself to a profane course of life, regardless of hell and heaven.

Both these prejudices last mentioned, though they are so opposite to each other, yet they arise from the same spring, and that is, impatience of study, and want of diligent attention in the search of truth. The dogmatist is in haste to believe something; he cannot keep himself long enough in suspence, till some bright and convincing evidence appear on one side, but throws himself casually into the sentiments of one party or another, and then he will hear no argument to the contrary. The sceptic will not take pains to search things to the bottom, but when he sees difficulties on both sides, resolves

to believe neither of them. Humility of soul, patience in study, diligence in enquiry, with an honest zeal for truth, would go a great way towards the cure of both these follies.

3. Another sort of temper that is very injurious to a right judgment of things is, an inconstant, fickle, changeable spirit, and a very uneven temper of mind. When such persons are in one humour, they pass a judgment of things agreeable to it; when their humour changes, they reverse their first judgment, and embrace a new opinion. They have no steadiness of soul; they want firmness of mind sufficient to establish themselves in any truth, and are ready to change it for the next alluring falsehood that is agreeable to their change of humour. This fickleness is sometimes so mingled with their very constitution by nature, or by distemper of body, that a cloudy day and a lowering sky shall strongly incline them to form an opinion, both of themselves and of persons and things round about them, quite different from what they believe when the sun shines and the heavens are serene.

This sort of people ought to judge of things and persons in their most sedate, peaceful, and composed hours of life, and reserve these judgments for their conduct at more unhappy seasons.

4. Some persons have a violent and turgid manner of talking and thinking; whatsoever they judge of, it is always with a tincture of this vanity. They are always in extremes, and pronounce concerning every thing in the superlative. If they think a man to be learned, he is the chief scholar of the age; if another has low parts, he is the greatest blockhead in nature; if they approve any book on divine subjects, it is the best book in the world, next to the Bible: If they speak of a storm of rain or hail, it is the most terrible storm that fell since the creation; and a cold winter day is the coldest that ever was known.

But the men of this swelling language ought to remember, that nature has ten thousand moderate things in it, and does not always deal in extremes as they do.

5. I think it may be called another sort of prejudices derived from humour, when some men believe a doctrine merely because it is ancient, and has been long believed; others are so fond of novelty, that nothing prevails upon their assent so much as new thoughts and new notions. Again, there are some who set a high esteem upon every thing that is foreign and far-fetched; therefore China pictures are admired, how awkward soever: Others value things the more for being of our own native growth, invention, or manufacture, and these as much despise foreign things.

Some men of letters and theology will not believe a proposition, even concerning a sublime subject, till every thing mysterious, deep, and difficult is cut off from it, though the scripture asserts it never so plainly; others are so fond of a mystery and things incomprehensible, that they would scarce believe the doctrine of the trinity, if it could be explained; they incline to that foolish rant of one of the ancients, *Credo quia impossibile est;* "I believe it because it is impossible."

To cure these mistakes, remember that neither antique nor novel, foreign nor native, mysterious nor plain, are certain characters either of truth or falsehood.

I might mention various other humours of men, that excite in them various prejudices, and lead them into rash and mistaken judgments: But these are sufficient for a specimen.

VII. There are several other weaknesses which belong to human nature, whereby we

are led into mistakes, and indeed are rendered almost incapable of passing a solid judgment in matters of great depth and difficulty. Some have a native obscurity of perception (or, shall I call it a want of natural sagacity?) whereby they are hindered from attaining clear and distinct ideas. Their thoughts always seem to have something confused and cloudy in them, and therefore they judge in the dark. Some have a defect in memory, and then they are not capable of comparing their present ideas with a great variety of others, in order to secure themselves from inconsistency in judgment. Others may have a memory large enough, yet they are subject to the same errors from a narrowness of soul, and such a fixation and confinement of thought to a few objects, that they scarce ever take a survey of things wide enough to judge wisely and well, and to secure themselves from all inconsistencies.

Though these are natural defects and weaknesses, yet they may in some measure be relieved by labour, diligence, and a due attention to proper rules.

But among all the causes of false judgment which are within ourselves, I ought by no means to leave out that universal and original spring of error, which we are informed of by the word of God; and that is, the sin and defection of our first parents; whereby all our best natural powers, both of mind and body, are impaired and rendered very much inferior to what they were in a state of innocence. Our understanding is darkened, our memory contracted, our corrupt humours and passions are grown predominant, our reason enfeebled, and various disorders attend our constitution and animal nature, whereby the mind is strangely imposed upon in its judgment of things. Nor is there any perfect relief to be expected on earth. There is no hope of ever recovering from these maladies, but by a sincere return to God in the ways of his own appointment, whereby we shall be kept safe from all dangerous and pernicious errors in the matters of religion; and though imperfections and mistakes will hang about us in the present life, as the effects of our original apostacy from God, yet we hope for a full deliverance from them when we arrive at heaven.

SECTION IV.

PREJUDICES ARISING FROM OTHER PERSONS.

WERE it not for the springs of prejudice that are lurking in ourselves, we should not be subject to so many mistakes from the influence of others: But since our nature is so susceptive of errors on all sides, it is fit we should have hints and notices given us, how far other persons may have power over us, and become the causes of our false judgments. This might all be cast into one heap, for they are all near akin, and mingle with each other; but for distinction sake let them be called the prejudices of education, of custom, of authority, and such as arise from the manner of proposal.

I. Those with whom our education is entrusted may lay the first foundation of many mistakes in our younger years. How many fooleries and errors are instilled into us by our nurses, our fellow-children, by servants, or unskilful teachers, which are not only maintained through the following parts of life, but sometimes have a very unhappy influence upon us! We are taught that there are goblins and bugbears in the dark; our young minds are crowded with the terrible ideas of ghosts appearing upon every occa-

sion, or with the pleasanter tales of fairies dancing at midnight. We learn to prophesy betimes, to foretel futurities by good or evil omens, and to presage approaching death in a family by ravens and little worms, which we therefore call a death-watch. We are taught to know before-hand, for a twelvemonth together, which days of the week will be fair or foul, which will be lucky or unlucky; nor is there any thing so silly, but may be imposed upon our understandings in that early part of life; and these ridiculous stories abide with us too long, and too far influence the weaker part of mankind.

We choose our particular sect and party in the civil, the religious, and the learned life, by the influence of education. In the colleges of learning, some are for the nominals, and some for the realists, in the science of metaphysics, because their tutors were devoted to these parties. The old philosophy and the new have gained thousands of partisans the same way: And every religion has its infant votaries, who are born, live, and die in the same faith, without examination of any article. The Turks are taught early to believe in Mahomet, the Jews in Moses; the heathens worship a multitude of gods, under the force of their education. And it would be well if there were not millions of Christians, who have little more to say for their religion than that they were born and bred up in it. The greatest part of the Christian world can hardly give any reason why they believe the Bible to be the word of God, but because they have always believed it, and they were taught so from their infancy. As Jews, and Turks, and American heathens, believe the most monstrous and incredible stories, because they have been trained up amongst them, as articles of faith; so the papists believe their transubstantiation, and make no difficulty of assenting to impossibilities, since it is the current doctrine of their catechisms. By the same means the several sects and parties in christianity believe all the strained interpretations of scripture, by which they have been taught to support their own tenets: They find nothing difficult in all the absurd glosses and far-fetched senses that are sometimes put upon the words of the sacred writers, because their ears have been always accustomed to these glosses: And therefore they sit so smooth and easy upon their understandings, that they know not how to admit the most natural and easy interpretation in opposition to them.

In the same manner we are nursed up in many silly and gross mistakes about domestic affairs, as well as in matters of political concernment. It is upon the same ground that children are trained up to be whigs and tories betimes; and every one learns the distinguishing terms of his own party, as the papists learn to say their prayers in Latin, without any meaning, reason, or devotion.

This sort of prejudice must be cured by calling all the principles of our young years to the bar of more mature reason, that we may judge of the things of nature and political affairs by juster rules of philosophy and observation: And even the matters of religion must be first enquired into by reason and conscience, and when these have led us to believe scripture to be the word of God, then that becomes our sovereign guide, and reason and conscience must submit to receive its dictates.

II. The next prejudice which I shall mention is that which arises from the custom or fashion of those amongst whom we live. Suppose we have freed ourselves from the younger prejudices of our education, yet we are in danger of having our mind turned aside from truth by the influence of general custom.

Our opinion of meats and drinks, of garments and forms of salutation, are influenced much more by custom, than by the eye, the ear, or the taste. Custom prevails even

over sense itself, and therefore no wonder if it prevail over reason too. What is it but custom that renders many of the mixtures of food and sauces elegant in Britain, which would be awkward and nauseous to the inhabitants of China, and indeed were nauseous to us when we first tasted them? What but custom could make those salutations polite in Muscovy, which are ridiculous in France or England? We call ourselves indeed the politer nations, but it is we who judge thus of ourselves; and that fancied politeness is sometimes more owing to custom than reason. Why are the forms of our present garment counted beautiful, and those fashions of our ancestors the matter of scoff and contempt, which in their day were all decent and genteel? It is custom that forms our opinion of dress, and reconciles us by degrees to those habits which at first seemed very odd and monstrous. It must be granted, there are some garments and habits which have a natural congruity or incongruity, modesty or immodesty, decency or indecency, gaudery or gravity: Though for the most part there is but little of reason in these affairs; but what little there is of reason or natural decency, custom triumphs over it all. It is almost impossible to pursuade a gay lady that any thing can be decent which is out of fashion: And it were well if fashion stretched its powers no farther than the business of drapery and the fair sex.

The methods of our education are governed by custom. It is custom and not reason, that sends every boy to learn the Roman poets, and begin a little acquaintance with Greek, before he is bound an apprentice to a soap-boiler or leather-seller. It is custom alone that teaches us Latin by the rules of a Latin grammar, a tedious and absurd method! And what is it but custom that has for past centuries confined the brightest geniuses, even of the highest rank in the female world, to the business of the needle only, and secluded them most unmercifully from the pleasures of knowledge, and the divine improvements of reason? But we begin to break all these chains, and reason begins to dictate the education of youth. May the growing age be learned and wise!

It is by the prejudice arising from our own customs, that we judge of all other civil and religious forms and practices. The rites and ceremonies of war and peace in other nations, the forms of weddings and funerals, the several ranks of magistracy, the trades and employments of both sexes, the public and the domestic affairs of life, and almost every thing of foreign customs, is judged irregular. It is all imagined to be unreasonable or unnatural, by those who have no other rule to judge of nature and reason, but the customs of their own country, or the little town where they dwell. Custom is called a second nature, but we often mistake it for nature itself.

Besides all this, there is a fashion in opinions, there is a fashion in writing and printing, in style and language. In our day it is the vogue of the nation, that parliaments may settle the succession of the crown, and that a people can make a king; in the last age this was a doctrine akin to treason. Citations from the Latin poets were an embellishment of style in the last century, and whole pages in that day were covered with them; it is now forbidden by custom, and exposed by the name of pedantry; whereas in truth both these are extremes. Sometimes our printed books shall abound in capitals, and sometimes reject them all. Now we deal much in essays, and most unreasonably despise systematick learning, whereas our fathers had a just value for regularity and systems; then folios and quartos were the fashionable sizes, as volumes in octavo are now. We are ever ready to run into extremes, and yet custom still persuades us that reason and nature are on our side.

This business of the fashion has a most powerful influence on our judgments; for it employs those two strong engines of fear and shame to operate upon our understandings with unhappy success. We are ashamed to believe or profess an unfashionable opinion in philosophy, and a cowardly soul dares not so much as indulge a thought contrary to the established or fashionable faith, nor act in opposition to custom, though it be according to the dictates of reason. I confess there is a respect due to mankind, which should incline even the wisest of men to follow the innocent customs of their country in the outward practices of civil life, and in some measure to submit to fashion in all indifferent affairs, where reason and scripture make no remonstrances against it. But the judgments of the mind ought to be for ever free, and not biassed by the customs and fashions of any age or nation whatsoever.

To deliver our understandings from this danger and slavery, we should consider these three things:

1. That the greatest part of the civil customs of any particular nation or age spring from humour rather than reason. Sometimes the humour of the prince prevails, and sometimes the humour of the people. It is either the great or the many who dictate the fashion, and these have not always the highest reason on their side.

2. Consider also that the customs of the same nation in different ages, the customs of different nations in the same age, and the customs of different towns and villages in the same nation, are very various and contrary to each other. The fashionable learning, language, sentiments, and rules of politeness, differ greatly in different countries and ages of mankind; but truth and reason are of a more uniform and steady nature, and do not change with the fashion. Upon this account, to cure the prepossessions which arise from custom, it is of excellent use to travel, and see the customs of various countries, and to read the travels of other men, and the history of past ages, that every thing may not seem strange and uncouth which is not practised within the limits of our own parish, or in the narrow space of our own lifetime.

3. Consider yet again, how often we ourselves have changed our own opinions concerning the decency, propriety, or congruity of several modes or practices in the world, especially if we have lived to the age of thirty or forty. Custom or fashion, even in all its changes, has been ready to have some degree of ascendency over our understandings, and what at one time seemed decent, appears obsolete and disagreeable afterward, when the fashion changes. Let us learn therefore to abstract as much as possible from custom and fashion, when we would pass a judgment concerning the real value and intrinsic nature of things.

III. The authority of men is the spring of another rank of prejudices.

Among these the authority of our forefathers and ancient authors is most remarkable. We pay deference to the opinions of others, merely because they lived a thousand years before us; and even the trifles and impertinencies that have a mark of antiquity upon them are reverenced for this reason, because they came from the ancients. It is granted that the ancients had many wise and great men among them, and some of their writings, which time hath delivered down to us, are truly valuable: But those writers lived rather in the infant state of the world; and the philosophers, as well as the polite authors of our age, are properly the elders, who have seen the mistakes of the younger ages of mankind, and corrected them by observation and experience. Some borrow all their religion from the fathers of the Christian church; or from their synods or councils; but

he that will read Monsieur Daille on the use of the fathers, will find many reasons why they are by no means fit to dictate our faith, since we have the gospel of Christ, and the writings of the apostles and prophets in our own hands.

Some persons believe every thing that their kindred, their parents, and their tutors believe. The veneration and the love which they have for their ancestors incline them to swallow down all their opinions at once, without examining what truth or falsehood there is in them. Men take up their principles by inheritance, and defend them as they would their estates, because they are born heirs to them. I freely grant, that parents are appointed by God and nature to teach us all the sentiments and practices of our younger years; and happy are those whose parents lead them into the paths of wisdom and truth! I grant farther, that when persons come to years of discretion, and judge for themselves, they ought to examine the opinions of their parents, with the greatest modesty, and with an humble deference to their superior character; they ought, in matters perfectly dubious, to give the preference to their parents' advice, and always to pay them the first respect, nor ever depart from their opinions and practice, till reason and conscience make it necessary. But after all, it is possible that parents may be mistaken, and therefore reason and scripture ought to be our final rules of determination in matters that relate to this world and that which is to come.

Sometimes a favourite author, or a writer of great name, drags a thousand followers after him into his own mistakes, merely by the authority of his name and character. The sentiments of Aristotle were imbibed and maintained by all the schools in Europe, for several centuries; and a citation from his writings was thought a sufficient proof of any proposition. The great Descartes had also too many implicit believers in the last age, though he himself, in his philosophy, disclaims all such influence over the minds of his readers. Calvin and Luther, in the days of reformation from popery, were learned and pious men, and there have been a succession of their disciples even to this day, who pay too much reverence to the words of their masters. There are others who renounce their authority, but give themselves up in too servile a manner to the opinion and authority of other masters, and follow as bad or worse guides in religion.

If only learned, and wise, and good men had influence on the sentiments of others, it would be at least a more excusable sort of prejudice, and there would be some colour and shadow of reason for it: But that riches, honours, and outward splendour should set up persons for dictators to all the rest of mankind; this is a most shameful invasion of the right of our understandings on the one hand, and as shameful a slavery of the soul on the other. The poor man, or the labourer, too often believes such a principle in politics, or in morality, and judges concerning the rights of the king and the people, just as his wealthy neighbour does. Half the parish follows the opinion of the esquire, and the tenants of a manor fall into the sentiments of their lord, especially if he lives amongst them. How unreasonable, and yet how common is this!

As for principles of religion, we frequently find how they are taken up and forsaken, changed and resumed by the influence of princes. In all nations the priests have much power also in dictating the religion of the people, but the princes dictate to them: And where there is a great pomp and grandeur attending the priesthood in any religion whatsoever, with so much the more reverence and stronger faith do the people believe whatever they teach them: Yet it is too often evident, that riches, and dominions, and high titles, in church or state, have no manner of pretence to truth and certainty, wisdom

and goodness, above the rest of mortals, because these superiorities in this world are not always conferred according to merit.

I confess, where a man of wisdom and years, of observation and experience, gives us his opinion and advice in matters of the civil or the moral life; reason tells us we should pay a great attention to him, and it is probable, he may be in the right. Where a man of long exercise in piety speaks of practical religion, there is a due deference to be paid to his sentiments: And the same we may say concerning an ingenious man long versed in any art or science, he may justly expect due regard when he speaks of his own affairs and proper business. But in other things each of these may be ignorant enough, notwithstanding all their piety and years, and particular skill: Nor even in their own proper province are they to be believed in every thing without reserve, and without examination.

To free ourselves from these prejudices, it is sufficient to remember, that there is no rank nor character among mankind, which has any just pretence to sway the judgments of other men by their authority: For there have been persons of the same rank and character who have maintained different and contrary sentiments; but all these can never be true, and therefore the mere name or reputation that any of them possesses, is not a sufficient evidence of truth.

Shall we believe the ancients in philosophy? But some of the ancients were Stoics, some Peripatetics, some Platonics, and some Epicureans, some Cynics, and some Sceptics. Shall we judge of matters of the Christian faith by the fathers, or primitive writers, for three or four hundred years after Christ? But they often contradicted one another, and themselves too; and, what is worse, they sometimes contradicted the scripture itself. Now among all these different and contrary sentiments in philosophy and religion, which of the ancients must we believe, for we cannot believe them all?

Again, To believe in all things, as our predecessors did, is the ready way to keep mankind in an everlasting state of infancy, and to lay an eternal bar against all the improvements of our reason and our happiness. Had the present age of philosophers satisfied themselves with the substantial forms and occult qualities of Aristotle, with the solid spheres, eccentrics, and epicycles of Ptolemy and the ancient astronomers; then the great Lord Bacon, Copernicus, and Descartes, with the greater Sir Isaac Newton, Mr. Locke, and Mr. Boyle, had risen in our world in vain. We must have blundered on still in successive generations among absurdities and thick darkness, and a hundred useful inventions for the happiness of human life had never been known.

Thus it is in matters of philosophy and science. But you will say, shall not our own ancestors determine our judgment in matters of civil or religious concernment? If they must, then the child of a heathen must believe that heathenism is truth; the son of a Papist must assent to all the absurdities of popery: The posterity of the Jews and Socinians must for ever be Socinians and Jews; and a man whose father was of republican principles, must make a succession of republicans in his family to the end of the world. If we ought always to believe whatsoever our parents, or our priests, or our princes believe, the inhabitants of China ought to worship their own idols, and the savages of Africa ought to believe all the nonsense, and practise the idolatry of their negro fathers and kings. The British nation, when it was heathen, could never have become Christian; and when it was a slave to Rome, it could never have been reformed.

Besides, let us consider, that the great God, our common Maker, has never given one man's understanding a legal and rightful sovereignty to determine truths for others, at least after they are past the state of childhood or minority. No single person, how learned, and wise, and great soever, or whatsoever natural, or civil, or ecclesiastical relation he may have to us, can claim this dominion over our faith. St. Paul the apostle, in his private capacity, would not do it; nor hath an inspired man any such authority, until he makes his divine commission appear. Our Saviour himself tells the Jews, that if he had not done such wondrous works among them, they had not sinned in disbelieving his doctrines, and refusing him for the Messiah. No bishop or presbyter, no synod or council, no church or assembly of men, since the days of inspiration, hath power derived to them from God, to make creeds or articles of faith for us, and impose them upon our understandings. We must all act according to the best of our own light, and the judgment of our own consciences, using the best advantages which providence hath given us, with an honest and impartial diligence to enquire and search out the truth: For every one of us must give an account of himself to God. To believe as the church or the court believes, is but a sorry and a dangerous faith: This principle would make more heathens than Christians, and more papists than protestants; and perhaps lead more souls to hell than to heaven; for our Saviour himself has plainly told us, that if the blind will be led by the blind, they must both fall into the ditch.

Though there be so much danger of error arising from the three prejudices last mentioned, yet before I dismiss this head, I think it proper to take notice, that as education, custom, and authority, are no sure evidences of truth, so neither are they certain marks of falsehood; for reason and scripture may join to dictate the same things which our parents, our nurses, our tutors, our friends, and our country, believe and profess. Yet there appears sometimes in our age a pride and petulancy in youth, zealous to cast off the sentiments of their fathers and teachers, on purpose to shew that they carry none of the prejudices of education and authority about them. They indulge all manner of licentious opinions and practices, from a vain pretence of asserting their liberty. But, alas! this is but changing one prejudice for another; and sometimes it happens by this means, that they make a sacrifice both of truth and virtue to the vile prejudices of their pride and sensuality.

IV. There is another tribe of prejudices which are near akin to those of authority, and that is, when we receive a doctrine because of the manner in which it is proposed to us by others. I have already mentioned the powerful influence that oratory and fine words have to insinuate a false opinion, and sometimes truth is refused, and suffers contempt in the lips of a wise man, for want of the charms of language: But there are several other manners of proposals, whereby mistaken sentiments are powerfully conveyed into the mind.

Some persons are easily persuaded to believe what another dictates with a positive air, and a great degree of assurance; they feel the overbearing force of a confident dictator, especially if he be of superior rank or character to themselves.

Some are quickly convinced of the truth of any doctrine, when he that proposes it puts on all the airs of piety, and makes solemn appeals to heaven, and protestations of the truth of it: The pious mind of a weaker christian is ready to receive any thing that is pronounced with such an awful solemnity.

It is a prejudice near akin to this, when a humble soul is frighted into any particular sentiments of religion, because a man of great name or character pronounces heresy upon the contrary sentiments, casts the disbeliever out of the church, and forbids him the gates of heaven.

Others are allured into particular opinions by gentler practices on the understanding: Not only the soft tempers of mankind, but even hardy and rugged souls, are sometimes led away captives to error by the soft airs of address, and the sweet and engaging methods of persuasion and kindness.

I grant, where natural or revealed religion plainly dictate to us the infinite and everlasting importance of any sacred doctrine, it cannot be improper to use any of these methods, to persuade men to receive and obey the truth, after we have given sufficient reason and argument to convince their understandings. Yet all these methods, considered in themselves, have been often used to convey falsehood into the soul as well as truth; and if we build our faith merely upon these foundations, without regard to the evidence of truth, and the strength of argument, our belief is but the effect of prejudice: For neither the positive, the awful or solemn, the terrible or the gentle methods of address, carry any certain evidence with them that truth lies on that side.

There is another manner of proposing our own opinion, or rather opposing the opinions of others, which demands a mention here, and that is when persons make a jest serve instead of an argument; when they refute what they call error by a turn of wit, and answer every objection against their own sentiments, by casting a sneer upon the objector. These scoffers practise with success upon weak and cowardly spirits: Such as have not been well established in religion or morality, have been laughed out of the best principles by a confident buffoon; they have yielded up their opinions to a witty banter, and sold their faith and religion for a jest.

There is no way to cure these evils in such a degenerate world as we live in, but by learning to distinguish well between the substance of any doctrine, and the manner of address, either in proposing, attacking, or defending it; and then by setting a just and severe guard of reason and conscience over all the exercises of our judgment, resolving to yield to nothing but the convincing evidence of truth, religiously obeying the light of reason in matters of pure reason, and the dictates of revelation in things that relate to our faith.

Thus we have taken a brief survey of some of the infinite varieties of prejudice that attend mankind on every side in the present state, and the dangers of error or of rash judgment we are perpetually exposed to in this life: This chapter shall conclude with one remark, and one piece of advice.

The remark is this: The same opinion, whether false or true, may be dictated by many prejudices at the same time; for, as I hinted before, prejudice may happen to dictate truth sometimes as well as error. But where two or more prejudices oppose one another, as it often happens, the stronger prevails and gains the assent: Yet how seldom does reason interpose with sufficient power to get the ascendent of them all, as it ought to do!

The advice follows, namely, Since we find such a swarm of prejudices attending us both within and without; since we feel the weakness of our reason, the frailty of our natures, and our insufficiency to guard ourselves from error upon this account, it is not at all unbecoming the character of a logician or a philosopher, together with

the advice already given, to direct every person in his search after truth to make his daily addresses to heaven, and implore the God of truth to lead him into all truth, and to ask wisdom of him who giveth liberally to them that ask it, and upbraideth us not with our own follies.

Such a devout practice will be an excellent preparative for the best improvement of all the directions and rules proposed in the two following chapters.

CHAPTER IV.

GENERAL DIRECTIONS TO ASSIST US IN JUDGING ARIGHT.

THE chief design of the art of logick is to assist us in forming a true judgment of things; a few proper observations for this end have been dropped occasionally in some of the foregoing chapters: Yet it is necessary to mention them again in this place, that we may have a more complete and simultaneous view of the general directions, which are necessary in order to judge aright. A multitude of advices may be framed for this purpose; the chief of them may, for order sake, be reduced to the following heads.

Direction I. When we consider ourselves as philosophers, or searchers after truth, we should examine all our old opinions afresh, and enquire what was the ground of them, and whether our assent were built on just evidence; and then we should cast off all those judgments which were formed heretofore without due examination. A man in pursuit of knowledge should throw off all those prejudices which he had imbibed in times past, and guard against all the springs of error, mentioned in the preceding chapter, with the utmost watchfulness for time to come.

Observe here, That this rule of casting away all our former prejudicate opinions and sentiments is not proposed to any of us to be practised at once, considered as men of business or religion, as friends or neighbours, as fathers or sons, as magistrates, subjects, or christians, but merely as philosophers and searchers after truth; and though it may be well presumed that many of our judgments, both true and false, together with the practices built thereon in the natural, the civil, and the religious life, were formed without sufficient evidence; yet an universal rejection of all these might destroy at once our present sense and practice of duty with regard to God, ourselves, and our fellow-creatures. Mankind would be hereby thrown into such a state of doubting and indifference, that it would be too long ere they recovered any principles of virtue or religion by a train of reasonings.

Besides, the common affairs of human life often demand a much speedier determination, and we must many times act upon present probabilities: The bulk of mankind have not time, and leisure, and advantages sufficient to begin all their knowledge anew, and to build up every single opinion and practice afresh, upon the justest grounds of evidence.

Yet let it be observed also, that so far as any person is capable of forming and correcting his notions, and his rules of conduct in the natural, civil, and religious life, by the strict rules of logick; and so far as he hath time and capacity to review his old opinions, to re-examine all those which are any ways doubtful, and to determine

nothing without just evidence, he is likely to become so much the wiser and the happier man, and, if divine grace assist him, so much the better Christian. And though this cannot be done all at once, yet it may be done by prudent steps and degrees till our whole set of opinions and principles be in time corrected and reformed, or at least established upon juster foundations.

Direction II. Endeavour that all your ideas of those objects, concerning which you pass any judgment, be clear and distinct, complete, comprehensive, extensive, and orderly, as far as you have occasion to judge concerning them. This is the substance of the last chapter of the First Part of Logick. The rules which direct our conceptions must be reviewed, if we would form our judgments aright. But if we will make haste to judge at all adventures, while our ideas are dark, and confused, and very imperfect, we shall be in danger of running into many mistakes. This is like a person, who would pretend to give the sum total of a large account in arithmetic, without surveying all the particulars; or as a painter, who professes to draw a fair and distinct landscape in the twilight, when he can hardly distinguish a house from a tree.

Observe here, That this direction does not require us to gain clear, distinct, complete ideas of things in all their parts, powers, and qualities, in an absolute sense; for this belongs to God alone, and is impossible for us to attain: But it is expressed in a relative or limited sense; that is, our ideas should be clear, distinct, and comprehensive, &c. at least so far as we have occasion at that time to judge concerning them. We may form many true and certain judgments concerning God, angels, animals, men, heaven, hell, &c. by those partial and very imperfect conceptions of them to which we have attained, if we judge no farther concerning them than our conceptions reach.

We may have a clear and distinct idea of the existence of many things in nature, and affirm that they do exist, though our ideas of their intimate essences and causes, their relations and manners of action, are very confused and obscure. We may judge well concerning several properties of any being, though other properties are unknown; for perhaps we know not all the properties of any being whatsoever.

Sometimes we have clear ideas of the absolute properties of an object; and we may judge of them with certainty, while the relative properties are very obscure and unknown to us. So we may have a clear and just idea of the area of a parallelogram, without knowing what relation it bears to the area of a triangle or a polygon. I may know the length of a diameter of a circle, without knowing what proportion it has to the circumference.

There are other things, whose external relative properties, with respect to each other, or whose relation to us we know better than their own inward and absolute properties, or their essential distinguishing attributes. We perceive clearly, that fire will warm or burn us, and will evaporate water; and that water will allay our thirst, or quench the fire, though we know not the inward distinguishing particles, or prime essential properties, of fire or water. We may know the king and lord chancellor, and affirm many things of them, in their legal characters, though we can have but a confused idea of their persons or natural features, if we have never seen their faces. So the scripture has revealed God himself to us, as our Creator, Preserver, Redeemer, and Sanctifier, and as the object of our worship, in clearer ideas than it has revealed many other abstruse questions which may be raised about his own divine essence or substance, his immensity or omnipresence.

This therefore is the general observation in order to guide our judgments, that we should not allow ourselves to form a judgment concerning things farther than our clear and distinct ideas reach, and then we are not in danger of error.

But there is one considerable objection against this rule, which is necessary to be answered; and there is one just and reasonable exception, which is as needful to be mentioned.

The objection is this: May we not judge safely concerning some total or complete ideas, when we have a clear perception only of some parts or properties of them? May we not affirm that all that is in God is eternal, or that all his unknown attributes are infinite, though we have so very imperfect an idea of God, eternity, and infinity? Again, may we not safely judge of particular objects, whose idea is obscure, by a clear idea of the general? May I not affirm, that every unknown species of animals has inward springs of motion, because I have a clear idea that these inward springs belong to an animal in general?

Answer. All those supposed unknown parts, properties, or species, are clearly and distinctly perceived to be connected with, or contained in the known parts, properties, or general ideas, which we suppose to be clear and distinct as far as we judge of them: And as we have no particular idea of those unknown divine attributes, or unknown species of animals; so there is nothing particular affirmed concerning them beyond what belongs to the general idea of divine attributes, or animals, with which I clearly and distinctly perceive them to be connected.

It may be illustrated in this manner. Suppose a long chain lies before me, whose nearest links I see are iron rings, and I see them fastened to a post near me, but the most distant links lie beyond the reach of my sight, so that I know not whether they are oval or round, brass or iron: Now I may boldly affirm, the whole length of this chain is fastened to the post, for I have a clear idea that the nearest links are thus fastened, and a clear idea that the distant links are connected with the nearest, if I can draw the whole chain by one link.

Or thus: If two known ideas, A and B, are evidently joined, or agree, and if C unknown be included in A, and also D unknown be included in B, then I may affirm that C and D are joined and agree; for I have a clear perception of the union of the two known ideas A and B; and also a clear perception of the connection of the unknown ideas with the known. So the clear and distinct ideas must still abide as a general necessary qualification, in order to form a right judgment; and indeed it is upon this foot that all ratiocination is built, and the conclusions are thus formed, which deduce things unknown from things known.

Yet it seems to me, that there is one just limitation or exception to this general rule of judgment, as built on clear and distinct ideas, and it is this:

Exception. In matters of mere testimony, whether human or divine, there is not always a necessity of clear and distinct ideas of the things which are believed. Though the evidence of propositions, which are entirely formed by ourselves, depends on the clearness and distinctness of those ideas of which they are composed, and on our own clear perception of their agreement or disagreement, yet we may justly assent to propositions formed by others, when we have neither a very clear conception in ourselves of the two ideas contained in the words, nor how they agree or disagree; provided always

that we have a clear and sufficient evidence of the credibility of the persons who inform us.

Thus when we read in scripture the great doctrines of the deity of Christ, of the union of the divine and human natures in him, of the divine agency of the blessed Spirit, that the Son is the brightness of his Father's glory, that all things were created by him and for him, that the Son shall give up his kingdom to the Father, and that God shall be all in all; we may safely believe them: For though our ideas of these objects themselves are not sufficiently clear, distinct, and perfect, for our own minds to form these judgments or propositions concerning them, yet we have a clear and distinct perception of God's revealing them, or that they are contained in scripture; and this is sufficient evidence to determine our assent.

The same thing holds true, in some measure, where credible human testimony assures us of some propositions, while we have no sufficient ideas of the subject and predicate of them to determine our assent. So when an honest and learned mathematician assures a ploughman that the three angles of a triangle are equal to two right angles, or that the square of the hypothenuse of a right-angled triangle is equal to the sum of the squares of the two sides; the ploughman, who has but confused ideas of these things, may firmly and safely believe these propositions upon the same ground, because he has evidence of the skill and faithfulness of his informer.*

* Perhaps some may object against this representation of things, and say, that "We cannot properly be said to believe a proposition any farther than we ourselves have ideas under the terms: Therefore if we have no ideas under the terms, we believe nothing but the connection of words or sounds; and if we have but obscure and inadequate ideas under the terms, then we partly believe a connection of things, and partly a connection of sounds: But that we cannot properly be said to believe the proposition, for our faith can never go beyond our ideas."

Now to set this matter in a clear light, I suppose that every proposition which is proposed to my assent, is a sentence made up of terms which have some ideas under them known or unknown to me. I confess, if I believe there are no ideas at all under the terms, and there is nothing meant by them, then indeed, with regard to me, it is the mere joining of sounds: But if, for instance, a ploughman has credible information from an honest and skilful mathematician, that an ellipsis is made by the section of a cone, he believes the proposition, or he believes the sentence is true, as it is made up of terms which his informant understands, though the ideas be unknown to him; that is, he believes there are some ideas which his informant has under these words which are really connected. And, I think, this may justly be called believing the proposition, for it is a belief of something more than the mere joining of sounds; it is a belief of the real connection of some unknown ideas belonging to those sounds, and in this sense a man may be said to believe the truth of a proposition, which he doth not understand at all.

With more reason still may we be said to believe a proposition upon credible testimony, if we have some sort of ideas under the terms, though they are but partial, or inadequate and obscure; such as divine answers were given by Urim and Thummim: For since it is purely upon testimony we believe the known parts of the ideas signified by those words to be connected, upon the same testimony we may also believe all the unknown parts of the ideas signified by those words to be connected, namely, because our informant is knowing and faithful. And in this sense we may justly be said to believe a proposition of scripture entirely, which we understand but very imperfectly, because God who reveals it is knowing and faithful in perfection.

And indeed, unless this representation of the matter be allowed, there are but very few propositions in the world, even in human things, to which we can give an entire assent, or which we may be said either to know or to believe, because there is scarce any thing on earth of which we have an adequate and most perfect idea. And it is evident, that in divine things there is scarce any thing which we could either know or believe without this allowance: For though reason and revelation join to inform me, that God is holy, how exceeding inadequate are my ideas of God, and of his holiness? Yet I may boldly and entirely assent to this whole proposition, since I am sure that every known and unknown idea signified by the term God, is connected with the ideas of the term holiness, because reason partly informs me, but especially because the divine testimony which has connected them, is certainly credible.

I might argue upon this head perhaps more forcibly from the doctrine of God's incomprehensibleness. If we could believe nothing but what we have ideas of, it would be impossible for us to believe that God is incomprehensible: For this implies in it a belief that there are some unknown ideas belonging to the nature of God; therefore we do both believe and profess that something concerning unknown ideas, when we believe and profess that God is incomprehensible.

Direction III. When you have obtained as clear and comprehensive ideas as is needful, both of the subject and predicate of a proposition, then compare those ideas of the subject and predicate together with the utmost attention, and observe how far they agree, and wherein they differ: Whether the proposition may be affirmed absolutely or relatively, whether in whole or in part, whether universally or particularly, and then under what particular limitations. Turn these ideas about in your mind, and take a view of them on all sides, just as a mason would do to see whether two hewn stones exactly suit each other in every part, and are fit to be joined in erecting a carved or fluted pillar.

Compare the whole subject with the whole predicate in their several parts: Take heed in this matter, that you neither add to nor diminish the ideas contained in the subject or in the predicate; for such an inadvertence or mistake will expose you to great error in judgment.

Direction IV. Search for evidence of truth with diligence and honesty, and be heartily ready to receive evidence, whether for the agreement or disagreement of ideas.

Search with diligence; spare no labour in searching for the truth in due proportion to the importance of the proposition. Read the best authors who have written on that subject; consult your wise and learned friends in conversation; and be not unwilling to borrow hints toward your improvement from the meanest person, nor to receive any glimpse of light from the most unlearned. Diligence and humility is the way to thrive in the riches of the understanding, as well as in gold or silver. Search carefully for the evidence of truth, and dig for wisdom as for hid treasure.

Search with a steady honesty of soul, and a sincere impartiality to find the truth. Watch against every temptation that might bribe your judgment, or warp it aside from truth. Do not indulge yourself to wish any unexamined proposition were true or false. A wish often perverts the judgment, and tempts the mind strangely to believe, upon slight evidence, whatsoever we wish to be true or false.

Direction V. Since the evidence of the agreement or disagreement of two ideas is the ground of our assent to any proposition, or the great criterion of truth; therefore

I persuade myself that most of those very persons who object against my representation of things, will yet readily confess, they believe all the propositions of scripture, rather than declare they do not believe several of them; though they must acknowledge that several of them are far above their understanding, or that they have scarce any ideas of the true sense of them; and therefore where propositions derived from credible testimony are made up of dark or inadequate ideas, I think it is much more proper to say, we believe them, than that we do not believe them, lest we cut off a multitude of the propositions of the Bible from our assent of faith.

Yet let it be observed here, that when we believe a proposition on mere testimony, of which we have no ideas at all, we can only be said to give a general implicit assent to the truth of that proposition without any particular knowledge of, or explicit assent to the special truth contained in that proposition: And this our implicit assent is of very little use, unless it be to testify our belief of the knowledge and veracity of him that informs us.

As our ideas of a proposition are more or less clear and adequate, as well as just and proper, so we do explicitly assent more or less to the particular truth contained in that proposition; and our assent hereby becomes more or less useful for the increase of our knowledge, or the direction of our practice.

When divine testimony plainly proposes to our faith such a proposition whereof we have but obscure, doubtful, and inadequate ideas, we are bound implicitly to believe the truth of it, as expressed in those terms, in order to show our submission to God, who revealed it, as a God of perfect knowledge and veracity: But it is our duty to use all proper methods to obtain a farther and explicit knowledge of the particular truth contained in the proposition, if we would improve by it either in knowledge or virtue. All necessary rules of grammar and criticism should be employed to find out the very ideas that belong to those words, and which were designed by the divine speaker or writer. Though we may believe the truth of a proposition which we do not understand, yet we should endeavour to understand every proposition which we believe to be true.

we should suspend our judgment, and neither affirm nor deny till this evidence appear.

This direction is different from the second; for though the evidence of the agreement or disagreement of two ideas most times depends on the clearness and distinctness of the ideas themselves, yet it does not always arise thence. Testimony may be a sufficient evidence of the agreement or disagreement of two obscure ideas, as we have seen just before in the exception under the second direction. Therefore, though we are not universally and in all cases bound to suspend our judgment till our ideas of the objects themselves are clear and distinct, yet we must always suspend our judgment, and withhold our assent to, or denial of any proposition, till some just evidence appear of its truth or falsehood. It is an impatience of doubt and suspense, a rashness and precipitance of judgment, and hastiness to believe something on one side or the other, that plunges us into many errors.

This direction to delay and suspend our assent is more particularly necessary to be observed when such propositions offer themselves to us as are supported by education, authority, custom, inclination, interest, or other powerful prejudices; for our judgment is led away insensibly to believe all that they dictate; and where prejudices and dangers of error are multiplied, we should set the stricter guard upon our assent.

Yet remember the caution or limitation here which I gave under the first direction, namely, that this is not to be too strictly applied to matters of daily practice, either in human life or religion; but when we consider ourselves as philosophers or searchers after truth, we should always withhold our assent where there is not just evidence: And as far and as fast as we can, in a due consistence with our daily necessary duties, we should also reform and adjust all our principles and practices both in religion and the civil life by these rules.

Direction VI. We must judge of every proposition by those proper and peculiar mediums or means, whereby the evidence of it is to be obtained, whether it be sense, consciousness, intelligence, reason, or testimony. All our faculties and powers are to be employed in judging of their proper objects.

If we judge of sounds, colours, odours, sapors, the smoothness, roughness, softness, or hardness of bodies, it must be done by the use of our senses: But then we must take heed that our senses are well disposed, as shall be shewn afterward.

And since our senses in their various exercises are in some cases liable to be deceived, and more especially when by our eyes or ears we judge of the figure, quantity, distance, and position of objects that are afar off, we ought to call our reason in to the assistance of our senses, and correct the errors of one sense by the help of another.

It is by the powers of sense and reason joined together, that we must judge philosophically of the inward nature, the secret properties and powers, the causes and effects, the relations and proportions of a thousand corporeal objects which surround us on earth, or are placed at a distance in the heavens. If a man, on the one hand, confines himself only to sensible experiments, and does not exercise reason upon them, he may surprise himself and others with strange appearances, and learn to entertain the world with sights and shows, but will never become a philosopher: And, on the other hand, if a man imprison himself in his closet, and employ the most exquisite powers of reason to find out the nature of things in the corporeal world, without the use of his senses, and the practice of experiments, he will frame to himself a scheme of chimeras instead

of true philosophy. Hence came the invention of substantial forms and qualities, of *materia prima* and privation, with all the insignificant names used by the peripatetick writers; and it was for want of more experiments that the great Descartes failed in several parts of his philosophical writings.

In the abstracted and speculative parts of the mathematics, which treat of quantity and number, the faculty of reason must be chiefly employed to perceive the relation of various quantities, and draw certain and useful conclusions; but it wants the assistance of sense also to be acquainted with lines, angles, and figures; and in practical mathematics our senses have still greater employment.

If we would judge of the pure properties and actions of the mind, of the nature of spirits, their various perceptions and powers, we must not enquire of our eyes and our ears, nor the images or shapes laid up in the brain, but we must have recourse to our own consciousness of what passes within our own mind.

If we are to pass a judgment upon any thing that relates to spirits in a state of union with animal nature, and the mixed properties of sensation, fancy, appetite, passion, pleasure, and pain, which arise thence, we must consult our own sensations, and the other powers which we find in ourselves, considered as men, or creatures made up of a mind and an animal, and by just reasonings deduce proper consequences, and improve our knowledge in these subjects.

If we have occasion to judge concerning matters done in past ages, or in distant countries, and where we ourselves cannot be present, the powers of sense and reason, for the most part, are not sufficient to inform us, and we must therefore have recourse to the testimony of others; and this is either divine or human.

In matters of mere human prudence, we shall find the greatest advantage by making wise observations on our own conduct, and the conduct of others, and a survey of the events attending such conduct. Experience in this case is equal to a natural sagacity, or rather superior. A treasure of observations and experiences collected by wise men, is of admirable service here; and perhaps there is nothing in the world of this kind equal to the sacred book of Proverbs, even if we look on it as a mere human writing.

In questions of natural religion, we must exercise the faculty of reason which God has given us; and since he has been pleased to afford us his word, we should confirm and improve, or correct our reasonings on this subject by the divine assistance of the Bible.

In matters of revealed religion, that is, Christianity, Judaism, &c. which we could never have known by the light of nature, the word of God is our only foundation and chief light; though here our reason must be used both to find out the true meaning of God in his word, and to derive just inferences from what God has written, as well as to judge of the credentials whereby divine testimony is distinguished from mere human testimony, or from imposture.

As divine revelation can never contradict right reason, for they are two great lights given us by our Creator for our conduct; so reason ought by no means to assume to itself a power to contradict divine revelation.

Though revelation be not contrary to reason, yet there are four classes wherein matters of revelation may be said to rise above, or go beyond our reason.

1. When revelation asserts two things of which we have clear ideas, to be joined, whose connection or agreement is not discoverable by reason; as when scripture informs

us, that the dead shall rise, that the earth shall be burnt up, and the man Christ Jesus shall return from heaven, none of these things could ever be found out or proved by reason.

2. When revelation affirms any proposition, while reason has no clear and distinct ideas of the subject, or of the predicate; as, God created all things by Jesus Christ: By the Urim and Thummim God gave forth divine oracles. The predicate of each of these propositions is to us an obscure idea, for we know not what was the peculiar agency of Jesus Christ, when God the Father created the world by him; nor have we any clear and certain conception what the Urim and Thummim were, nor how God gave answers to his people by them.

3. When revelation, in plain and express language, declares some doctrine which our reason at present knows not, with evidence and certainty, how or in what sense to reconcile to some of its own principles; as, that the child Jesus is the mighty God; *Isaiah* ix. 6. which proposition carries a seeming opposition to the unity and spirituality of the Godhead, which are principles of reason.

4. When two propositions or doctrines are plainly asserted by divine revelation, which our reason at present knows not how or in what sense, with evidence and certainty, to reconcile with one another; as, The Father is the only true God, *John* xvii. 3. and yet Christ is over all, God blessed for ever, *Rom.* ix. 5.

Now divine revelation having declared all these propositions, reason is bound to receive them, because it cannot prove them to be utterly inconsistent or impossible, though the ideas of them may be obscure, though we ourselves see not the rational connection of them, and though we know not certainly how to reconcile them. In these cases reason must submit to faith; that is, we are bound to believe what God asserts, and wait till he shall clear up that which seems dark and difficult, and till the mysteries of faith shall be farther explained to us, either in this world or in the world to come,* and reason itself dictates the submission.

Direction VII. It is very useful to have some general principles of truth settled in the mind, whose evidence is great and obvious, that they may be always ready at hand to assist us in judging of the great variety of things which occur. These may be called first notions, or fundamental principles; for though many of them are deduced from each other, yet most or all of them may be called principles when compared with a thousand other judgments which we form under the regulation and influence of these primary propositions.

Every art and science, as well as the affairs of civil life and religion, have peculiar principles of this kind belonging to them. There are metaphysical, physical, mathematical, political, economical, medicinal, theological, moral, and prudential principles of judgment. It would be too tedious to give a specimen of them all in this place. Those which are of the most universal use to us, both as men and as Christians, may be found in the following chapter among the rules of judgment about particular objects.

Direction VIII. Let the degrees of your assent to every proposition bear an exact proportion to the different degrees of evidence. Remember this is one of the greatest principles of wisdom that man can arrive at in this world, and the best human security against dangerous mistakes in speculation or practice.

* See something more on this subject, Direction II. preceding, and Chap. V. Sect. 6.

In the nature of things, of which our knowledge is made up, there is infinite variety in their degrees of evidence. And as God hath given our minds a power to suspend their assent till the evidence be plain, so we have a power to receive things which are proposed to us with a stronger or weaker belief in infinite variety of degrees, proportionable to their evidence. I believe that the planets are inhabited, and I believe that the earth rolls among them yearly round the sun; but I do not believe both these propositions with an equal firmness of assent, because the arguments for the latter are drawn from mathematical observations; but the arguments for the former are but probable conjectures and moral reasonings. Yet neither do I believe either of these propositions so firmly, as I do that the earth is about twenty-four thousand miles round, because the mathematical proof of this is much easier, plainer, and stronger. And yet farther, when I say that the earth was created by the power of God, I have still a more infallible assurance of this than of all the rest, because reason and scripture join to assure me of it.

Direction IX. Keep your mind always open to receive truth, and never set limits to your own improvements. Be ready always to hear what may be objected even against your favourite opinions, and those which have had longest possession of your assent. And if there should be any new and uncontrollable evidence brought against these old or beloved sentiments, do not wink your eyes fast against the light, but part with any thing for the sake of truth: Remember when you overcome an error you gain truth; the victory is on your side, and the advantage is all your own.

I confess those grand principles of belief and practice which universally influence our conduct both with regard to this life and the life to come, should be supposed to be well settled in the first years of our studies; such as, the existence and providence of God, the truth of Christianity, the authority of Scripture, the great rules of morality, &c. We should avoid a light fluttering genius, ever ready to change our foundations, and to be carried about with every wind of doctrine. To guard against which inconvenience, we should labour with earnest diligence and fervent prayer, that our most fundamental and important points of belief and practice may be established upon just grounds of reason and scripture, when we come to years of discretion, and fit to judge for ourselves in such important points. Yet since it is possible that the folly or prejudices of younger years may have established persons in some mistaken sentiments, even in very important matters, we should always hold ourselves ready to receive any new advantage toward the correction or improvement even of our established principles, as well as opinions of lesser moment.

CHAPTER V.

SPECIAL RULES TO DIRECT US IN JUDGING OF PARTICULAR OBJECTS.

It would be endless to run through all those particular objects concerning which we have occasion to pass a judgment at one time or another. Things of the most frequent occurrence, of the widest extent, and of the greatest importance, are the objects and exercises of sense, of reason, and speculation: The matters of morality, religion, and

prudence, of human and divine testimony, together with the essays of reasoning upon things past and future. Special rules relating to all these will be the subject of the following sections.

SECTION I.

PRINCIPLES AND RULES OF JUDGMENT CONCERNING THE OBJECTS OF SENSE.

THOUGH our senses are sometimes liable to be deceived, yet when they are rightly disposed, and fitly exercised about their proper objects, with the just assistance of reason, they give us sufficient evidence of truth.

This may be proved by an argument drawn from the wisdom, goodness, and faithfulness of God our Creator. It was he gave us our senses, and he would not make us of such a constitution as to be liable to perpetual deception, and unavoidable error, in using these faculties of sense in the best manner we are capable of, about those very things which are the proper objects of them.

This may be proved also by the ill consequences that would follow from the supposition of the contrary. If we could have no certainty of the dictates of our senses, we could never be sure of any of the common affairs and occurrences of life. Men could not transact any of their civil or moral concerns with any certainty or justice; nor indeed could we eat or drink, walk or move, with safety. Our senses direct us in all these.

Again, the matters of religion depend in some measure upon the certainty of the dictates of sense; for faith comes by hearing; and it is to our senses that God appeals in working miracles to prove his own revelation. Now if when our eyes, and ears, and other organs of sense are rightly disposed and exercised about their proper objects, they were always liable to be deceived, there could be no knowledge of the gospel, no proof of divine revelation by visions, voices, or miracles.

Our senses will discover things near us and round about us, which are necessary for our present state, with sufficient exactness; and things distant also, so far as they relate to our necessary use of them.

Nor is there need of any more accurate rules for the use of our senses in the judgment of all the common affairs of life, or even of miraculous and divine operations, than the vulgar part of mankind are sufficiently acquainted with by nature and by their own daily observations.

But if we would express these rules in a more exact manner, how to judge by the dictates of our senses, they should be represented thus:

1. We must take care that the organs of our sense be rightly disposed, and not under the power of any distemper or considerable decay; as for instance, that our eyes are not tinctured with the jaundice, when we would judge of colours, lest we pronounce them all yellow: That our hands are not burning in a fever, nor benumbed with frost or the palsy, when we would judge of the heat or coldness of any object: That our palate be not vitiated by any disease, or by some other improper taste, when we would judge of the true taste of any solid or liquid. This direction relates to all our senses, but the following rules chiefly refer to our sight.

2. We must observe whether the object be at a proper distance; for if it be too near

or too far off, our eyes will not sufficiently distinguish many things which are properly the objects of sight; and therefore, if possible, we must make nearer approaches to the object, or remove farther from it, till we have obtained that due distance which gives us the clearest perception.

3. We must not employ our sight to take a full survey at once of objects that are too large for it; but we must view them by parts, and then judge of the whole: Nor must our senses judge of objects too small, for some things which appear through glasses to be really and distinctly existent, are either utterly invisible, or greatly confused, when we would judge of them by the naked eye.

4. We must place ourselves in such a position toward the object, or place the object in such a position toward our eye, as may give us the clearest representation of it: For a different position greatly alters the appearance of the shape of bodies; and for this reason we should change the position both of the eye and the object in some cases, that by viewing the object in several appearances, we may pass a more complete and certain judgment concerning it.

5. We must consider what the medium is by which objects are represented to our senses; whether it be thinner or thicker; whether it be air or vapour, or water, or glass, &c. whether it be duly enlightened or dusky; whether it reflect or refract, or only transmit the appearance of the object; and whether it be tinctured with any particular colour; whether it be moving or at rest.

6. We must sometimes use other helps to assist our senses; and if we make use of glasses, we must make all just allowances for the thickness or thinness of them, for the clearness or dulness, for the smoothness or roughness, for the plainness, the convexity or concavity of them, and for the distance at which these glasses are placed from the eye, or from the object, or from one another, if there be two or more glasses used, and all this according to the rules of art. The same sort of caution should be used also in mediums which assist the hearing, such as speaking-trumpets, hearing-trumpets, &c.

7. If the object may be proposed to more senses than one, let us call in the assistance of some other senses to examine it, and this will increase the evidence of what one sense dictates. For example; our ear may assist our eye in judging of the distance of bodies, which are both visible and sonorous, as an exploded cannon, or a cloud charged with thunder. Our feeling may assist our sight in judging of the kind, the shape, situation, or distance of bodies that are near at hand, as whether a garment be silk or stuff, &c. So, if I both see, hear, and embrace my friend, I am sure he is present.

8. We should also make several trials, at some distant times, and in different circumstances, comparing former experiments with later, and our own observations with those of other persons.

It is by such methods as these that modern philosophy has been so greatly improved by the use of sensible experiments.

SECTION II.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF REASON AND SPECULATION.

IT is by reason we judge both in matters of speculation and practice; there are peculiar rules which relate to things practical, whether they be matters of religion, morality, or prudence: Yet many things in this section may be applied to practical enquiries and matters of faith, though it chiefly relates to knowledge and speculations of reason.

1. Whatsoever clear ideas we can join together without inconsistency, are to be counted possible, because almighty power can make whatsoever we can conceive.

2. From the mere possibility of a thing we cannot infer its actual existence; nor from the non-existence of it can we infer its impossibility.

Note, The idea of God seems to claim an exemption from this general rule: For if he be possible, he certainly exists, because the very idea includes eternity, and he cannot begin to be: If he exist not, he is impossible, for the very same reason.

3. Whatsoever is evidently contained in the idea of any thing, may be affirmed of that thing with certainty. Reason is contained in the idea of a man; and existence is contained in the idea of God; and therefore we may affirm God exists, and man is reasonable.

4. It is impossible that the same thing should be and not be, at the same time and in the same respect. Thence it follows, that two contradictory ideas cannot be joined in the same part of the same subject, at the same time and in the same respects: Or, that two contradictory propositions can never be both true.

5. The more we converse with any subject in its various properties, the better knowledge of it we are likely to attain; and by frequent and repeated enquiries and experiments, reasonings and conversations about it, we confirm our true judgments of that thing, and correct our former mistakes.

6. Yet after our utmost enquiries, we can never be assured by reason, that we know all the powers and properties of any finite being.

7. If finite beings are not adequately known by us, much less the things infinite; for it is of the nature of a finite mind not to be able to comprehend what is infinite.

8. We may judge and argue very justly and certainly concerning infinites, in some parts of them, or so far as our ideas reach, though the infinity of them hath something incomprehensible in it. And this is built on the general rule following, namely,

9. Whatsoever is sufficiently clear and evident, ought not to be denied, though there are other things belonging to the same subject, which cannot be comprehended. I may affirm many things with certainty concerning human souls, their union with bodies, concerning the divisibility of matter, and the attributes of God, though many other things relating to them are all darkness to us.

10. If any opinion proposed has either no arguments, or equal arguments for and against it, we must remain in perfect suspense about it, till convincing evidence appear on one side.

11. Where present necessity of action does not constrain us to determine, we should not immediately yield up our assent to mere probable arguments, without a due reserve,

if we have any reasonable hope of obtaining greater light and evidence on one side or the other: For when the balance of the judgment once resigns its equilibrium or neutrality to a mere probable argument, it is too ready to settle itself on that side, so that the mind will not easily change that judgment though bright and strong evidence appear afterwards on the other side.

12. Of two opinions, if one has unanswerable difficulties attending it, we must not reject it immediately, till we examine whether the contrary opinion has not difficulties as unanswerable.

13. If each opinion has objections against it which we cannot answer, or reconcile, we should rather embrace that which has the least difficulties in it, and which has the best arguments to support it: And let our assent bear proportion to the superior evidence.

14. If any doctrine hath very strong and sufficient light and evidence to command our assent, we should not reject it because there is an objection or two against it which we are not able to answer; for upon this foot a common Christian would be baffled out of every article of his faith, and must renounce even the dictates of his reason and his senses; and the most learned man perhaps would hold but very few of them fast: For some objections which attend the sacred doctrine of the eternity and the omnipresence of God, and the philosophical doctrines of light, atoms, space, motion, &c. are hardly solvable to this day.

15. Where two extremes are proposed, either in matters of speculation or practice, and neither of them has certain and convincing evidence, it is generally safest to take the middle way. Moderation is more likely to come near the truth than doubtful extremes. This is an excellent rule to judge of the characters and value of the greatest part of persons and things; for nature seldom deals in superlatives. It is a good rule also by which to form our judgment in many speculative controversies; a reconciling medium in such cases does often best secure truth as well as peace.

16. When two different propositions have each a very strong and cogent evidence, and do not plainly appear inconsistent, we may believe both of them, though we cannot at present see the way to reconcile them. Reason, as well as our own consciousness, assures us, that the will of man is free, and that multitudes of human actions are in that respect contingent; and yet reason and scripture assure us, that God foreknows them all, and this implies a certain fatality. Now though learned men have not to this day hit on any so clear and happy method as is desired to reconcile these propositions, yet since we do not see a plain consistency in them, we justly believe them both, because their evidence is great.

17. Let us not therefore too suddenly determine in difficult matters, that two things are utterly inconsistent, for there are many propositions which may appear inconsistent at first, and yet afterwards we find their consistency, and the way of reconciling them may be made plain and easy; as also, there are other propositions which may appear consistent at first, but after due examination we find their inconsistency.

18. For the same reason we should not call those difficulties utterly insolveable, or those objections unanswerable, which we are not presently able to answer: Time and diligence may give farther light.

19. In short, if we will secure ourselves from error, we should not be too frequent or hasty in asserting the certain consistency or inconsistency, the absolute universality,

necessity, or impossibility of things, where there is not the brightest evidence. He is but a young and raw philosopher, who, when he sees two particular ideas evidently agree, immediately asserts them to agree universally, to agree necessarily, and that it is impossible it should be otherwise. Or when he sees evidently that two particular ideas happen to disagree, he presently asserts their constant and natural inconsistency, their utter impossibility of agreement, and calls every thing contrary to his opinion, absurdity and nonsense. A true philosopher will affirm or deny with much caution and modesty, unless he has thoroughly examined and found the evidence of every part of his assertion exceeding plain.

20. Let us have a care of building our assurance of any important point of doctrine upon one single argument, if there are more to be obtained. We should not slight and reject all other arguments which support the same doctrine, lest, if our favourite argument should be refuted, and fail us, we should be tempted to abandon that important principle of truth. I think this was a very culpable practice in Descartes, and some of his followers, who when he had found out the argument for the existence of God, derived from the idea of a most perfect and self-existent being, he seemed to despise and abandon all other arguments against atheism.

21. If we happen to have our chief arguments for any opinion refuted, we should not immediately give up the opinion itself; for perhaps it may be a truth still, and we may find it to be justly supported by other arguments, which we might once think weaker, or perhaps by new arguments, which we knew not before.

22. We ought to esteem that to be sufficient evidence of a proposition, where both the kind and the force of the arguments or proofs are as great as the nature of the thing admits, and as the necessity or exigence of the case requires. So if we have a credible and certain testimony that Christ rose from the dead, it is enough; we are not to expect mathematical or ocular demonstration for it, at least in our day.

23. Though we should seek what proofs may be attained of any proposition, and we should receive any number of arguments which are just and evident for the confirmation of the same truth, yet we must not judge of the truth of any proposition by the number of arguments which are brought to support it, but by the strength and weight of them; a building will stand firmer and longer on four large pillars of marble, than on ten of sand, or earth, or timber.

24. Yet where certain evidence is not to be found or expected, a considerable number of probable arguments carry great weight with them, even in matters of speculation. That is a probable hypothesis in philosophy, or in theology, which goes farthest toward the solution of many difficult questions arising on any subject.

SECTION III.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF MORALITY AND RELIGION.

Here it may be proper, in the first place, to mention a few definitions of words or terms.

By matters of morality and religion, I mean those things which relate to our duty to God, ourselves, or our fellow-creatures. Moral good, or virtue, or holiness, is an

action or temper conformable to the rule of our duty. Moral evil, or vice, or sin, is an action or temper unconformable to the rule of our duty, or a neglect to fulfil it.

Note, The words vice or virtue chiefly imply the relation of our actions to men and this world. Sin and holiness rather imply their relation to God and the other world.

Natural good is that which gives us pleasure or satisfaction. Natural evil is that which gives us pain or grief. Happiness consists in the attainment of the highest and most lasting natural good. Misery consists in suffering the highest and most lasting natural evil; that is, in short, heaven or hell.

Though this be a just account of perfect happiness and perfect misery, yet wheresoever pain overbalances pleasure, there is a degree of misery; and wheresoever pleasure overbalances pain, there is a degree of happiness.

I proceed now to lay down some principles and rules of judgment in matters of morality and religion.

1. The will of our Maker, whether discovered by reason or revelation, carries the highest authority with it, and is therefore the highest rule of duty to intelligent creatures; a conformity or nonconformity to it determines their actions to be morally good or evil.

2. Whatsoever is really an immediate duty toward ourselves, or toward our fellow-creatures, is more remotely a duty to God; and therefore in the practice of it we should have an eye to the will of God as our rule, and to his glory as our end.

3. Our wise and gracious Creator has closely united our duty and our happiness together; and has connected sin, or vice, and punishment; that is, he has ordained that the highest natural good and evil should have a close connection with moral good and evil, and that both in the nature of things, and by his own positive appointment.

4. Conscience should seek all due information, in order to determine what is duty, and what is sin, because happiness and misery depend upon it.

5. On this account our inclination to present temporal good and our aversion to present temporal evil, must be wisely overbalanced by the consideration of future and eternal good or evil, that is happiness or misery. And for this reason we should not omit a duty, or commit a sin, to gain any temporal good, or to avoid any temporal evil.

6. Though our natural reason in a state of innocence might be sufficient to find out those duties which were necessary for an innocent creature, in order to abide in the favour of his Maker, yet in a fallen state our natural reason is by no means sufficient to find out all that is necessary to restore a sinful creature to the divine favour.

7. Therefore God hath condescended, in various ages of mankind, to reveal to sinful men what he requires of them in order to their restoration, and has appointed in his word some peculiar matters of faith and practice, in order to their salvation. This is called revealed religion; as the things knowable concerning God and our duty by the light of nature, are called natural religion.

8. There are also many parts of morality and natural religion, or many natural duties relating to God, to ourselves, and to our neighbours, which would be exceeding difficult and tedious for the bulk of mankind to find out and determine by natural reason; therefore it has pleased God in this sacred book of divine revelation, to express the most necessary duties of this kind in a very plain and easy manner, and make

them intelligible to souls of the lowest capacity; or they may be very easily derived thence by the use of reason.

9. As there are some duties much more necessary, and more important than others are, so every duty requires our application to understand and practise it, in proportion to its necessity and importance.

10. Where two duties seem to stand in opposition to each other, and we cannot practise both, the less must give way to the greater, and the omission of the less is not sinful. So ceremonial laws give way to moral: God will have mercy and not sacrifice.

11. In duties of natural religion, we may judge of the different degrees of their necessity and importance by reason, according to their greater or more apparent tendency to the honour of God and the good of men: But in matters of revealed religion, it is only divine revelation can certainly inform us what is most necessary and most important; yet we may be assisted also in that search by the exercises of reason.

12. In actions wherein there may be some scruple about the duty or lawfulness of them, we should choose always the safest side, and abstain as far as we can from the practice of things whose lawfulness we suspect.

13. Points of the greatest importance in human life, or in religion, are generally the most evident, both in the nature of things, and in the word of God; and where points of faith or practice are exceeding difficult to find out, they cannot be exceeding important. This proposition may be proved by the goodness and faithfulness of God as well as by experience and observation.

14. In some of the outward practices and forms of religion, as well as human affairs, there is frequently a present necessity of speedy action one way or another: In such a case, having surveyed arguments on both sides, as far as our time and circumstances admit, we must guide our practice by those reasons which appear most probable, and seem at that time to overbalance the rest; yet always reserving room to admit farther light and evidence, when such occurrences return again. It is a preponderation of circumstantial arguments that must determine our actions in a thousand occurrences.

15. We may also determine upon probable arguments where the matter is of small consequence, and would not answer the trouble of seeking after certainty. Life and time are more precious than to have a large share of them laid out in scrupulous enquiries, whether smoaking tobacco, or wearing a periwig be lawful or no.

16. In affairs of greater importance, and which may have a long, lasting, and extensive influence on our future conduct or happiness, we should not take up with probabilities, if certainty may be attained. Where there is any doubt on the mind, in such cases, we should call in the assistance of all manner of circumstances, reasons, motives, consequences on all sides: We must wait longer, and with earnest request seek human and divine advice, before we fully determine our judgment and our practice; according to the old Roman sentence, *Quod statuendum est semel, deliberandum est diu.* We should be long in considering what we must determine once for all.

SECTION IV.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF HUMAN PRUDENCE.

THE great design of prudence, as distinct from morality and religion, is to determine and manage every affair with decency and to the best advantage. That is decent which is agreeable to our state, condition, or circumstances, whether it be in behaviour, discourse, or action, That is advantageous which attains the most and best purposes, and avoids the most and greatest inconveniencies.

As there is infinite variety in the circumstances of persons, things, actions, times, and places, so we must be furnished with such general rules as are accommodable to all this variety by a wise judgment and discretion: For what is an act of consummate prudence in some times, places, and circumstances, would be consummate folly in others. Now these rules may be ranged in the following manner:

1. Our regard to persons or things should be governed by the degrees of concernment we have with them, the relation we have to them, or the expectation we have from them. These should be the measures by which we should proportion our diligence and application in any thing that relates to them.

2. We should always consider whether the thing we pursue be attainable; whether it be worthy our pursuit; whether it be worthy the degree of pursuit; whether it be worthy of the means used in order to attain it. This rule is necessary both in matters of knowledge, and matters of practice.

3. When the advantages and disadvantages, conveniencies and inconveniencies of any action are balanced together, we must finally determine on that side which has the superior weight; and the sooner in things which are necessarily and speedily to be done or determined.

4. If advantages and disadvantages in their own nature are equal, then those which are most certain or likely as to the event should turn the scale of our judgment, and determine our practice.

5. Where the improbabilities of success or advantage are greater than the probabilities, it is not prudence to act or venture, if the action may be attended with danger or loss equal to the proposed gain. It is proper to enquire whether this be not the case in almost all lotteries; for they that hold stakes will certainly secure part to themselves; and only the remainder being divided into prizes, must render the improbability of gain to each adventurer greater than the probability.

6. We should not despise or neglect any real advantage, and abandon the pursuit of it, though we cannot attain all the advantages that we desire. This would be to act like children, who are fond of something which strikes their fancy most, and sullen and regardless of every thing else, if they are not humoured in that fancy.

7. Though a general knowledge of things be useful in science and in human life, yet we should content ourselves with a more superficial knowledge of those things which have the least relation to our chief end and design.

8. This rule holds good also in matters of business and practice, as well as in matters of knowledge; and therefore we should not grasp at every thing, lest in the end

we attain nothing. Persons that either by an inconstancy of temper, or by a vain ambition, will pursue every sort of art and science, study and business, seldom grow excellent in any one of them: And projectors who form twenty schemes seldom use sufficient application to finish one of them, or make it turn to good account.

9. Take heed of delaying and trifling amongst the means instead of reaching at the end. Take heed of wasting a life in mere speculative studies, which is called to action and employment: Dwell not too long in philosophical, mathematical, or grammatical parts of learning, when your chief design is law, physic, or divinity. Do not spend the day in gathering flowers by the way-side, lest night come upon you before you arrive at your journey's end, and then you will not reach it.

10. Where the case and circumstances of wise and good men resemble our own case and circumstances, we may borrow a great deal of instruction toward our prudent conduct from their example; as well as in all cases we may learn much from their conversation and advice.

11. After all other rules remember this, that mere speculation in matters of human prudence can never be a perfect director, without experience and observation. We may be content therefore in our younger years to commit some unavoidable mistakes in point of prudence, and we shall see mistakes enough in the conduct of others, both which ought to be treasured up amongst our useful observations, in order to teach us better judgment for time to come. Sometimes the mistakes, imprudences, and follies, which ourselves or others have been guilty of, give us brighter and more effectual lessons of prudence, than the wisest counsels, and the fairest examples could ever have done.

SECTION V.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF HUMAN TESTIMONY.

THE evidence of human testimony is not so proper to lead us into the knowledge of the essence and inward nature of things, as to acquaint us with the existence of things, and to inform us of matters of fact both past and present. And though there be a great deal of fallibility in the testimony of men, yet there are some things we may be almost as certain of, as that the sun shines, or that five twenties make a hundred. Who is there at London that knows any thing of the world, but believes there is such a city as Paris in France; that the Pope dwells at Rome; that Julius Cæsar was an emperor; or that Luther had a great hand in the reformation?

If we observe the following rules, we may arrive at such a certainty in many things of human testimony, as that it is morally impossible we should be deceived, that is, we may obtain a moral certainty.

1. Let us consider whether the thing reported be in itself possible; if not, it can never be credible, whosoever relates it.

2. Consider farther whether it be probable, whether there are any concurring circumstances to prove it, beside the mere testimony of the person that relates it. I confess, if these last conditions are wanting, the thing may be true, but then it ought to have the stronger testimony to support it.

3. Consider whether the person who relates it be capable of knowing the truth: Whether he be a skilful judge in such matters, if it be a business of art, or a nice

appearance in nature, or some curious experiment in philosophy. But if it be a mere occurrence in life, a plain sensible matter of fact, it is enough to enquire whether he who relates it were an eye or an ear witness, or whether he himself had it only by hearsay, or can trace it up to the original.

4. Consider whether the narrator be honest and faithful, as well as skilful; whether he hath no bias upon his mind, no peculiar gain or profit by believing or reporting it, no interest or principle which might warp his own belief aside from truth, or which might tempt him to prevaricate, to speak falsely, or to give a representation a little different from the naked truth of things. In short, whether there be no occasion of suspicion concerning his report.

5. Consider whether several persons agree together in the report of this matter; and if so, then whether these persons who joined together in their testimony, might not be supposed to combine together in a falsehood. Whether they are persons of sufficient skill, probity, and credit. It might be also enquired, whether they are of different nations, sects, parties, opinions, or interests. For the more divided they are in all these, the more likely is their report to be true, if they agree together in their account of the same thing; and especially if they persist in it without wavering.

6. Consider farther, whether the report were capable of being easily refuted at first, if it had not been true: If so, this confirms the testimony.

7. Enquire yet again, whether there has been a constant, uniform tradition and belief of this matter from the very first age or time when the thing was transacted, without any reasonable doubts or contradictions. Or,

8. If any part of it hath been doubted by any considerable persons, whether it has been searched out and afterwards confirmed, by having all the scruples and doubts removed. In either of these cases the testimony becomes more firm and credible.

9. Enquire, on the other hand, whether there are any considerable objections remaining against the belief of that proposition so attested. Whether there be any thing very improbable in the thing itself. Whether any concurrent circumstances seem to oppose it. Whether any person or persons give a positive and plain testimony against it. Whether they are equally skilful and equally faithful as those who assert it. Whether there be as many or more in number, and whether they might have any secret bias or influence on them to contradict it.

10. Sometimes the entire silence of a thing may have something of weight toward the decision of a doubtful point of history, or a matter of human faith, namely, where the fact is pretended to be public, if the persons who are silent about it were skilful to observe, and could not but know such an occurrence; if they were engaged by principle or by interest to have declared it; if they had fair opportunity to speak of it: And these things may tend to make a matter suspicious, if it be not very well attested by positive proof.

11. Remember that in some reports there are more marks of falsehood than of truth, and in others there are more marks of truth than of falsehood. By a comparison of all these things together, and putting every argument on one side and the other into the balance, we must form as good a judgment as we can which side preponderates; and give a strong or a feeble assent or dissent, or withhold our judgment entirely, according to greater or lesser evidence, according to more plain or dubious marks of truth or falsehood.

12. Observe that in matters of human testimony there is oftentimes a great mixture of truth and falsehood in the report itself: Some parts of the story may be perfectly true, and some utterly false; and some may have such a blended confusion of circumstances, which are a little warped aside from the truth, and misrepresented, that there is need of good skill and accuracy to form a judgment concerning them, and determine which part is true, and which is false. The whole report is not to be believed, because some parts are indubitably true, nor the whole to be rejected, because some parts are as evident falsehoods.

We may draw two remarkable observations from this section.

Observation I. How certain is the truth of the Christian religion, and particularly of the resurrection of Christ, which is a matter of fact on which Christianity is built! We have almost all the concurrent evidences that can be derived from human testimony joining to confirm this glorious truth. The fact is not impossible; concurrent circumstances cast a favourable aspect on it; it was foretold by one who wrought miracles; and therefore not unlikely, nor unexpected: The apostles and first disciples were eye and ear witnesses, for they conversed with their risen Lord; they were the most plain honest men in themselves; the temptations of worldly interests did rather discourage their belief and report of it: They all agree in this matter, though they were men of different characters; pharisees and fishermen, and publicans, men of Judea and Galilee, and perhaps some heathens, who were early converted: The thing might easily have been disproved if it were false; it hath been conveyed by constant tradition and writing down to our times; those who at first doubted, were afterwards convinced by certain proofs; nor have any pretended to give any proof of the contrary, but merely denied the fact with impudence, in opposition to all these evidences.

Observation II. How weak is the faith which is due to a multitude of things in ancient human history; for though many of these criteria, or marks of credibility, are found plainly in the more general and public facts, yet as to a multitude of particular facts and circumstances, how deficient are they in such evidence as should demand our assent! Perhaps there is nothing that ever was done in all past ages, and which was not a public fact, so well attested as the resurrection of Christ.

SECTION VI.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF DIVINE TESTIMONY.

As human testimony acquaints us with matters of fact, both past and present, which lie beyond the reach of our own personal notice; so divine testimony is suited to inform us both of the nature of things, as well as matters of fact, and of things future, as well as present or past.

Whatsoever is dictated to us by God himself, or by men who are divinely inspired, must be believed with full assurance. Reason demands us to believe whatsoever divine revelation dictates: For God is perfectly wise, and cannot be deceived; he is faithful and good, and will not deceive his creatures: And when reason has found out the certain marks or credentials of divine testimony to belong to any proposition, there remains then no farther enquiry to be made, but only to find out the true sense and meaning of that which God has revealed, for reason itself demands the belief of it.

Now divine testimony or revelation requires these following credentials:

1. That the propositions or doctrines revealed be not inconsistent with reason; for intelligent creatures can never be bound to believe real inconsistencies. Therefore we are sure the popish doctrine of transubstantiation is not a matter of divine revelation, because it is contrary to all our senses and our reason, even in their proper exercises.

God can dictate nothing but what is worthy of himself, and agreeable to his own nature and divine perfections. Now many of these perfections are discoverable by the light of reason, and whatsoever is inconsistent with these perfections, cannot be a divine revelation.

But let it be noted, that in matters of practice towards our fellow-creatures, God may command us to act in a manner contrary to what reason would direct antecedent to that command. So Abraham was commanded to offer up his son a sacrifice: The Israelites were ordered to borrow of the Egyptians without paying them, and to plunder and slay the inhabitants of Canaan: Because God has a sovereign right to all things, and can with equity dispossess his creatures of life, and every thing which he has given them, and especially such sinful creatures as mankind; and he can appoint whom he pleases to be the instruments of this just dispossession or deprivation. So that these divine commands are not really inconsistent with right reason; for whatsoever is so cannot be believed where that inconsistency appears.

2. Upon the same account the whole doctrine of revelation must be consistent with itself; every part of it must be consistent with each other: And though in points of practice latter revelation may repeal or cancel former divine laws, yet in matters of belief, no latter revelation can be inconsistent with what has been heretofore revealed.

3. Divine revelation must be confirmed by some divine and supernatural appearances, some extraordinary signs or tokens, visions, voices, or miracles wrought, or prophecies fulfilled. There must be some demonstrations of the presence and power of God, superior to all the powers of nature, or the settled connection which God as Creator has established among his creatures in this visible world.

4. If there are any such extraordinary and wonderful appearances and operations brought to contest with, or to oppose divine revelation, there must and always will be such a superiority on the side of that revelation which is truly divine, as to manifest that God is there. This was the case when the Egyptian sorcerers contended with Moses. But the wonders which Moses wrought did so far transcend the power of the magicians, as made them confess, It was the finger of God.

5. These divine appearances or attestations to revelation must be either known to ourselves by our own personal observation of them, or they must be sufficiently attested by others, according to the principles and rules by which matters of human faith are to be judged in the foregoing section.

Some of those who lived in the nations and ages where miracles were wrought, were eye and ear witnesses of the truth and divinity of the revelation; but we, who live in these distant ages, must have them derived down to us by just and incontestible history and tradition. We also, even in these distant times, may see the accomplishment of some ancient predictions, and thereby obtain that advantage toward the confirmation of our faith in divine revelation, beyond what those persons enjoyed who lived when the predictions were pronounced.

6. There is another very considerable confirmation of divine testimony; and that

is, when the doctrines themselves, either on the publication or the belief of them produce supernatural effects. Such were the miraculous powers which were communicated to believers in the first ages of Christianity, the conversion of Jews or Gentiles, the amazing success of the gospel of Christ, without human aid, and in opposition to a thousand impediments; its power in changing the hearts and lives of ignorant and vicious heathens, and wicked and profane creatures in all nations, and filling them with a spirit of virtue, piety, and goodness. Wheresoever persons have found this effect in their own hearts, wrought by a belief of the gospel of Christ, they have a witness in themselves of the truth of it, and abundant reason to believe it divine.

Of the difference between reason and revelation, and in what sense the latter is superior, see more in Chapter II. Section 9. and Chapter IV. Direction 6.

SECTION VII.

PRINCIPLES AND RULES OF JUDGING, CONCERNING THINGS PAST, PRESENT, AND TO COME, BY THE MERE USE OF REASON.

THOUGH we attain the greatest assurance of things past and future by divine faith, and learn many matters of fact, both past and present, by human faith, yet reason also may in a good degree assist us to judge of matters of fact both past, present, and to come, by the following principles:

1. There is a system of beings round about us, of which we ourselves are a part, which we call the world, and in this world there is a course of nature, or a settled order of causes, effects, antecedents, concomitants, consequences, &c. from which the author of nature doth not vary but upon very important occasions.

2. Where antecedents, concomitants, and consequents, causes and effects, signs and things signified, subjects and adjuncts, are necessarily connected with each other, we may infer the causes from the effects, and effects from causes, the antecedents from the consequents, as well as consequents from antecedents, &c. and thereby be pretty certain of many things both past, present, and to come. It is by this principle that astronomers can tell what day and hour the sun and moon were eclipsed five hundred years ago, and predict all future eclipses as long as the world shall stand. They can tell precisely at what minute the sun rises or sets this day at Pequin in China, or what altitude the dog-star had at mid-night or mid-noon in Rome, on the day when Julius Cæsar was slain. Gardeners upon the same principle can foretel the months when every plant will be in bloom, and the ploughman knows the weeks of harvest: We are sure if there be a chicken, there was an egg: If there be a rainbow, we are certain it rains not far off: If we behold a tree growing on the earth, we know it has naturally a root under ground.

3. Where there is a necessary connection between causes and effects, antecedents and consequents, signs and things signified, we know also that like causes will have like effects, and proportionable causes will have proportionable effects, contrary causes will have contrary effects; and observing men may form many judgments by the rules of similitude and proportion, where the causes, effects, &c. are not entirely the same.

4. Where there is but a probable and uncertain connection between antecedents, concomitants, and consequents, we can give but a conjecture, or a probable determina-

tion. If the clouds gather, or the weather-glass sinks, we suppose it will rain: If a man spit blood frequently with coughing, we suppose his lungs are hurt: If very dangerous symptoms appear, we expect his death.

5. Where causes operate freely, with a liberty of indifference to this or the contrary, there we cannot certainly know what the effects will be: For it seems to be contingent, and the certain knowledge of it belongs only to God. This is the case in the greatest part of human actions.

6. Yet wise men, by a just observation of human nature, will give very probable conjectures in this matter, also concerning things past, or things future, because human nature in all ages and nations has such a conformity to itself. By a knowledge of the tempers of men, and their present circumstances, we may be able to give a happy guess what their conduct will be, and what will be the event, by an observation of the like cases in former times. This made the emperor Marcus Antoninus to say, "By looking back into history, and considering the fate and revolutions of governments, you will be able to form a guess, and almost prophesy upon the future. For things past, present, and to come, are strangely uniform and of a colour, and are commonly cast in the same mould. So that upon the matter, forty years of human life may serve for a sample of ten thousand." *Collier's Antoninus*, Book vii. Sect. 50.

7. There are also some other principles of judging concerning the past actions of men in former ages, besides books, histories, and traditions, which are the mediums of conveying human testimony; as we may infer the skill and magnificence of the ancients by some fragments of their statues, and ruins of their buildings. We know what Roman legions came into Great Britain, by numbers of bricks dug out of the earth in some parts of the island, with the marks of some particular legion upon them, which must have been employed there in brick-making. We rectify some mistakes in history by statues, coins, old altars, utensils of war, &c. We confirm or disprove some pretended traditions and historical writings, by medals, images, pictures, urns, &c.

Thus I have gone through all those particular objects of our judgment which I first proposed, and have laid down principles and rules by which we may safely conduct ourselves therein. There is a variety of other objects, concerning which we are occasionally called to pass a judgment, namely, the characters of persons, the value and worth of things, the sense and meaning of particular writers, matters of wit, oratory, poesy, matters of equity in judicial courts, matters of traffic and commerce between man and man, which would be endless to enumerate. But if the general and special rules of judgment, which have been mentioned in these two last chapters, are treasured up in the mind, and wrought into the very temper of our souls in our younger years, they will lay a foundation for just and regular judgment concerning a thousand special occurrences in the religious, civil, and learned life.

LOGICK.

THE THIRD PART.

OF REASONING AND SYLLOGISM.

As the first work of the mind is perception, whereby our ideas are framed, and the second is judgment, which joins or disjoins our ideas, and forms a proposition, so the third operation of the mind is reasoning, which joins several propositions together, and makes a syllogism, that is, an argument whereby we are wont to infer something that is less known, from truths which are more evident.

In treating of this subject, let us consider more particularly,

1. The nature of a syllogism, and the parts of which it is composed.
2. The several kinds of syllogisms, with particular rules relating to them.
3. The doctrine of sophisms, or false reasoning, together with the means of avoiding them, and the manner of solving or answering them.
4. Some general rules to direct our reasoning.

CHAPTER I.

OF THE NATURE OF A SYLLOGISM, AND THE PARTS OF WHICH IT IS COMPOSED.

If the mere perception and comparison of two ideas would always shew us whether they agree or disagree; then all rational propositions would be matters of intelligence, or first principles, and there would be no use of reasoning or drawing any consequences. It is the narrowness of the human mind which introduces the necessity of reasoning. When we are unable to judge of the truth or falsehood of a proposition in an immediate manner, by the mere contemplation of its subject and predicate, we are then constrained to use a medium, and to compare each of them with some third idea, that by seeing how far they agree or disagree with it, we may be able to judge how far they agree or disagree among themselves: As, if there are two lines, A and B, and I know not whether they are equal or no, I take a third line C, or an inch, and apply it to each of them; if it agree with them both, then I infer that A and B are equal; but if it agree with one and not with the other, then I conclude A and B are unequal: If it agree with neither of them, there can be no comparison.

So, if the question be, Whether God must be worshipped, we seek a third idea, suppose the idea of a creator, and say,

Our creator must be worshipped.

God is our creator.

Therefore God must be worshipped.

The comparison of this third idea with the two distinct parts of the question, usually requires two propositions, which are called the premises: The third proposition which is drawn from them is the conclusion, wherein the question itself is answered, and the subject and predicate joined either in the negative or the affirmative.

The foundation of all affirmative conclusions is laid in this general truth, that so far as two proposed ideas agree to any third idea, they agree also among themselves. The character of creator agrees to God, and worship agrees to a creator, therefore worship agrees to God.

The foundation of all negative conclusions is this, that where one of the two proposed ideas agrees with the third idea, and the other disagrees with it, they must needs disagree so far also with one another; as, If no sinners are happy, and if angels are happy, then angels are not sinners.

Thus it appears what is the strict and just notion of a syllogism: It is a sentence or argument made up of three propositions, so disposed as that the last is necessarily inferred from those which go before, as in the instances which have been just mentioned.

In the constitution of a syllogism two things may be considered, *viz.* the matter and the form of it.

The matter of which a syllogism is made up, is three propositions; and these three propositions are made up of three ideas or terms variously joined. The three terms are called the remote matter of a syllogism; and the three propositions the proxime or immediate matter of it. The three terms are named the major, the minor, and the middle. The predicate of the conclusion is called the major term, because it is generally of a larger extension than the minor term, or the subject. The major and minor terms are called the extremes. The middle term is the third idea, invented and disposed in two propositions, in such a manner as to shew the connection between the major and minor term in the conclusion: For which reason the middle term itself is sometimes called the argument.

That proposition which contains the predicate of the conclusion, connected with the middle term, is usually called the major proposition, whereas the minor proposition connects the middle term with the subject of the conclusion, and is sometimes called the assumption.

Note, This exact distinction of the several parts of a syllogism, and of the major and minor terms connected with the middle term, in the major and minor propositions, does chiefly belong to simple or categorical syllogisms, of which we shall speak in the next chapter, though all syllogisms whatsoever have something analogical to it.

Note farther, That the major proposition is generally placed first, and the minor second, and the conclusion in the last place, where the syllogism is regularly composed and represented.

The form of a syllogism is the framing and disposing of the premises according to art or just principles of reasoning, and the regular inference of the conclusion from them.

The act of reasoning, or inferring one thing from another, is generally expressed and known by the particle therefore, when the argument is formed according to the rules of art; though in common discourse or writing, such causal particles as for, because, manifest the act of reasoning as well as the illative particles then and therefore: And wheresoever any of these words are used, there is a perfect syllogism expressed or implied, though perhaps the three propositions do not appear, or are not placed in regular form.

CHAPTER II.

OF THE VARIOUS KINDS OF SYLLOGISMS, WITH PARTICULAR RULES RELATING TO THEM.

SYLLOGISMS are divided into various kinds, either according to the question which is proved by them, according to the nature and composition of them, or according to the middle term, which is used to prove the question.

SECTION I.

OF UNIVERSAL AND PARTICULAR SYLLOGISMS, BOTH NEGATIVE AND AFFIRMATIVE.

ACCORDING to the question which is to be proved, so syllogisms are divided into universal affirmative, universal negative, particular affirmative, and particular negative. This is often called a division of syllogisms drawn from the conclusion; for so many sorts of conclusions there may be, which are marked with the letters A, E, I, O.

In an universal affirmative syllogism, one idea is proved universally to agree with another, and may be universally affirmed of it, as, Every sin deserves death; every unlawful wish is a sin; therefore every unlawful wish deserves death.

In an universal negative syllogism, one idea is proved to disagree with another idea universally, and may be thus denied of it: as, No injustice can be pleasing to God; all persecution for the sake of conscience is injustice; therefore no persecution for conscience sake can be pleasing to God.

Particular affirmative and particular negative syllogisms may be easily understood by what is said of universals, and there will be sufficient examples given of all these in the next section.

The general principle upon which these universal and particular syllogisms are founded is this, Whatsoever is affirmed or denied universally of any idea, may be affirmed or denied of all the particular kinds or beings, which are contained in the extension of that universal idea. So the desert of death is affirmed universally of sin, and an unlawful wish is one particular kind of sin, which is contained in the universal idea of sin, therefore the desert of death may be affirmed concerning an unlawful wish. And so of the rest.

Note, In the doctrine of syllogisms, a singular and indefinite proposition are ranked among universals, as was before observed in the doctrine of propositions.

SECTION II.

OF PLAIN SIMPLE SYLLOGISMS, AND THEIR RULES.

THE next division of syllogisms is into single and compound. This is drawn from the nature and composition of them.

Single syllogisms are made up of three propositions: Compound syllogisms contain more than three propositions, and may be formed into two or more syllogisms. Single syllogisms, for distinction sake, may be divided into * simple, complex, and conjunctive.

Those are properly called simple or categorical syllogisms, which are made up of three plain, single, or categorical propositions, wherein the middle term is evidently and regularly joined with one part of the question in the major proposition, and with the other in the minor, whence there follows a plain single conclusion; as, Every human virtue is to be sought with diligence; prudence is a human virtue; therefore prudence is to be sought diligently.

Note, Though the terms of propositions may be complex; yet where the composition of the whole argument is thus plain, simple, and regular, it is properly called a simple syllogism, since the complexion does not belong to the syllogistic form of it.

Simple syllogisms have several rules belonging to them, which being observed will generally secure us from false inferences; but these rules being founded on four general axioms, it is necessary to mention these axioms beforehand, for the use of those who will enter into the speculative reason of all these rules:

Axiom 1. Particular propositions are contained in universals, and may be inferred from them; but universals are not contained in particulars, nor can be inferred from them.

Axiom 2. In all universal propositions, the subject is universal: In all particular propositions, the subject is particular.

Axiom 3. In all affirmative propositions, the predicate has no greater extension than the subject; for its extension is restrained by the subject, and therefore it is always to be esteemed as a particular idea. It is by mere accident, if it ever be taken universally, and cannot happen but in such universal or singular propositions as are reciprocal.

Axiom 4. The predicate of a negative proposition is always taken universally, for in its whole extension it is denied of the subject. If we say no stone is vegetable, we deny all sorts of vegetation concerning stones.

The rules of simple, regular syllogisms are these:

Rule I. The middle term must not be taken twice particularly, but once at least universally. For if the middle term be taken for two different parts or kinds of the same universal idea, then the subject of the conclusion is compared with one of these parts and the predicate with another part, and this will never shew whether that subject and predicate agree or disagree: There will then be four distinct terms in the syllogism, and the two parts of the question will not be compared with the same third idea; as if I say, Some men are pious, and some men are robbers, I can never infer that some

* As ideas and propositions are divided into single and compound, and single are subdivided into simple and complex; so there are the same divisions and subdivisions applied to syllogisms.

robbers are pious, for the middle term, men, being taken twice particularly, it is not the same men who are spoken of in the major and minor propositions.

Rule II. The terms in the conclusion must never be taken more universally than they are in the premises. The reason is derived from the first axiom, that generals can never be inferred from particulars.

Rule III. A negative conclusion cannot be proved by two affirmative premises. For when the two terms of the conclusion are united or agree to the middle term, it does not follow by any means that they disagree with one another.

Rule IV. If one of the premises be negative, the conclusion must be negative. For if the middle term be denied of either part of the conclusion, it may shew that the terms of the conclusion disagree, but it can never shew that they agree.

Rule V. If either of the premises be particular, the conclusion must be particular. This may be proved for the most part from the first axiom.

These two last rules are sometimes united in this single sentence, The conclusion always follows the weaker part of the premises. Now negatives and particulars are counted inferior to affirmatives and universals.

Rule VI. From two negative premises nothing can be concluded. For they separate the middle term both from the subject and predicate of the conclusion, and when two ideas disagree to a third, we cannot infer that they either agree or disagree with each other. Yet where the negation is a part of the middle term, the two premises may look like negatives according to the words, but one of them is affirmative in sense; as, What has no thought cannot reason; but a worm has no thought; therefore a worm cannot reason. The minor proposition does really affirm the middle term concerning the subject, namely, a worm is what has no thought, and thus it is properly in this syllogism an affirmative proposition.

Rule VII. From two particular premises nothing can be concluded. This rule depends chiefly on the first axiom.

A more laborious and accurate proof of these rules, and the derivation of every part of them in all possible cases, from the foregoing axioms, require so much time, and are of so little importance to assist the right use of reason, that it is needless to insist longer upon them here. See all this done ingeniously in the Logick called The Art of Thinking, Part III. Chap. III. &c.

SECTION III.

OF THE MOODS AND FIGURES OF SIMPLE SYLLOGISMS.

SIMPLE syllogisms are adorned and surrounded in the common books of Logick with a variety of inventions about moods and figures, wherein by the artificial contexture of the letters A, E, I, and O, men have endeavoured to transform logick, or the art of reasoning, into a sort of mechanism, and to teach boys to syllogise, or frame arguments and refute them, without any real inward knowledge of the question. This is almost in the same manner as school-boys have been taught perhaps in their trifling years to compose Latin verses, that is, by certain tables and squares, with a variety of letters in them, wherein by counting every sixth, seventh, or eighth letter,

certain Latin words should be framed in the form of hexameters or pentameters; and this may be done by those who know nothing of Latin or of verses.

I confess some of these logical subtleties have much more use than those versifying tables, and there is much ingenuity discovered in determining the precise number of syllogisms that may be formed in every figure, and giving the reasons of them; yet the light of nature, a good judgment, and due consideration of things, tend more to true reasoning than all the trappings of moods and figures.

But lest this book be charged with too great defects and imperfections, it may be proper to give short hints of that which some logicians have spent so much time and paper upon.

All the possible compositions of three of the letters, A, E, I, O, to make three propositions, amount to sixty-four; but fifty-four of them are excluded from forming true syllogisms by the seven rules in the foregoing section; the remaining ten are variously diversified by figures and moods into fourteen syllogisms.

The figure of a syllogism is the proper disposition of the middle term with the parts of the question.

A mood is the regular determination of propositions according to their quantity and quality, that is, their universal or particular affirmation or negation; which are signified by certain artificial words wherein the consonants are neglected, and these four vowels, A, E, I, O, are only regarded.

There are generally counted three figures.

In the first of them the middle term is the subject of the major proposition, and the predicate of the minor. This contains four moods, namely, *Barbara, Celarent, Darii, Ferio.* And it is the excellency of this figure, that all sorts of questions or conclusions may be proved by it, whether A, E, I, or O, that is, universal or particular, affirmative or negative; as,

Bar- Every wicked man is truly miserable;
ba- All tyrants are wicked men;
ra. Therefore all tyrants are truly miserable.

Ce- He that is always in fear is not happy;
la- Covetous men are always in fear;
rent. Therefore covetous men are not happy.

Da- Whatsoever furthers our salvation is good for us;
ri- Some afflictions further our salvation;
i. Therefore some afflictions are good for us.

Fe- Nothing that must be repented of is truly desirable;
ri- Some pleasures must be repented of;
o. Therefore there are some pleasures which are not truly desirable.

In the second figure the middle term is the predicate of both the premises; this contains four moods, namely, *Cesare, Camestres, Festino, Baroco,* and it admits only of negative conclusions; as,

Ce- No liar is fit to be believed;
sa- Every good Christian is fit to be believed;
re. Therefore no good Christian is a liar.

The reader may easily form examples of the rest.

The third figure requires that the middle term be the subject of both the premises. It has six moods, namely, *Darapti, Felapton, Disamis, Datisi, Bocardo, Ferison:* And it admits only of particular conclusions; as,

Da- Whosoever loves God shall be saved;
rap- All the lovers of God have their imperfections;
ti. Therefore some who have imperfections shall be saved.

I leave the reader to form examples of the rest.

The moods of these three figures are comprised in four Latin verses.

Barbara, Celarent, Darii, Ferio quoque primæ.
Cesare, Camestres, Festino, Baroco, secundæ.
Tertia *Darapti* sibi vindicat, atque *Felapton,*
Adjungens *Disamis, Datisi, Bocardo, Ferison.*

The special rules of the three figures are these.

In the first figure the major proposition must always be universal, and the minor affirmative.

In the second figure also the major must be universal, and one of the premises, together with the conclusion, must be negative.

In the third figure the minor must be affirmative, and the conclusion always particular.

There is also a fourth figure, wherein the middle term is predicated in the major proposition, and subjected in the minor: But this is a very indirect and oblique manner of concluding, and is never used in the sciences, nor in human life, and therefore I call it useless.—Some logicians will allow it to be nothing else but a mere inversion of the first figure; the moods of it, namely, *Baralipton,* or *Barbari, Calentes, Dibatis, Fespamo, Fresisom,* are not worthy to be explained by one example.

SECTION IV.

OF COMPLEX SYLLOGISMS.

IT is not the mere use of complex terms in a syllogism that gives it this name, though one of the terms is usually complex; but those are properly called complex syllogisms, in which the middle term is not connected with the whole subject, or the whole predicate in two distinct propositions, but is intermingled and compared with them by parts, or in a more confused manner in different forms of speech; as,

The sun is a senseless being;
The Persians worshipped the sun;
Therefore the Persians worshipped a senseless being.

Here the predicate of the conclusion is, worshipped a senseless being, part of which is joined with the middle term, sun, in the major proposition, and the other part in the minor. Though this sort of argument is confessed to be entangled or confused, and irregular, if examined by the rules of simple syllogisms; yet there is a great variety of arguments used in books of learning, and in common life, whose consequence is strong and evident, and which must be ranked under this head; as,

I. Exclusive propositions will form a complex argument; as, Pious men are the only favourites of heaven; true Christians are favourites of heaven; therefore true Christians are pious men. Or thus, Hypocrites are not pious men; therefore hypocrites are no favourites of heaven.

II. Exceptive propositions will make such complex syllogisms; as, None but physicians came to the consultation; the nurse is no physician; therefore the nurse came not to the consultation.

III. Or, comparative propositions; as, Knowledge is better than riches; virtue is better than knowledge; therefore virtue is better than riches: Or thus, A dove will fly a mile in a minute; a swallow flies swifter than a dove; therefore a swallow will fly more than a mile in a minute.

IV. Or, inceptive and desitive propositions; as, The fogs vanish as the sun rises; but the fogs have not yet begun to vanish; therefore the sun is not yet risen.

V. Or, modal propositions; as, It is necessary that a general understand the art of war; but Caius does not understand the art of war; therefore it is necessary Caius should not be a general: Or thus, A total eclipse of the sun would cause darkness at noon; it is possible that the moon at that time may totally eclispe the sun; therefore it is possible that the moon may cause darkness at noon.

Besides all these, there is a great number of complex syllogisms which can hardly be reduced under any particular titles, because the forms of human language are so exceeding various; as,

Christianity requires us to believe what the apostles wrote; St. Paul is an apostle; therefore christianity requires us to believe what St. Paul wrote.

No human artist can make an animal; a fly or a worm is an animal; therefore no human artist can make a fly or a worm.

The father always lived in London; the son always lived with the father; therefore the son always lived in London.

The blossom soon follows the full bud; this pear-tree hath many full buds; therefore it will shortly have many blossoms.

One hail-stone never falls alone; but a hail-stone fell just now; therefore others fell with it.

Thunder seldom comes without lightning; but it thundered yesterday; therefore probably it lightened also.

Moses wrote before the Trojan war; the first Greek historians wrote after the Trojan war; therefore the first Greek historians wrote after Moses.*

Now the force of all these arguments is so evident and conclusive, that though the form of the syllogism be never so irregular, yet we are sure the inferences are just and true; for the premises, according to the reason of things, do really contain the conclusion that is deduced from them, which is a never-failing test of true syllogism, as shall be shewn hereafter.

The truth of most of these complex syllogisms may also be made to appear, if needful, by reducing them either to regular simple syllogisms, or to some of the conjunctive syllogisms, which are described in the next section. I will give an instance only in the first, and leave the rest to exercise the ingenuity of the reader. The first argument may be reduced to a syllogism in *Barbara*, thus,

* Perhaps some of these syllogisms may be reduced to those which I call connexive afterward; but it is of little moment to what species they belong; for it is not any formal set of rules, so much as the evidence and force of reason, that must determine the truth or falsehood of all such syllogisms.

The sun is a senseless being;
What the Persians worshipped is the sun;
Therefore what the Persians worshipped is a senseless being.
Though the conclusive force of this argument is evident without this reduction.

SECTION V.

OF CONJUNCTIVE SYLLOGISMS.

THOSE are called conjunctive syllogisms, wherein one of the premises, namely, the major, has distinct parts, which are joined by a conjunction, or some such particle of speech. Most times the major or minor, or both, are explicitly compound propositions: And generally the major proposition is made up of two distinct parts or propositions, in such a manner, as that, by the assertion of one in the minor, the other is either asserted or denied in the conclusion; or, by the denial of one in the minor, the other is either asserted or denied in the conclusion. It is hardly possible indeed to fit any short definition to include all the kinds of them; but the chief amongst them are the conditional syllogism, the disjunctive, the relative, and the connexive.

I. The conditional, or hypothetical syllogism, is that whose major or minor, or both, are conditional propositions; as, If there be a God, the world is governed by providence; but there is a God; therefore the world is governed by providence.

These syllogisms admit two sorts of true argumentation, where the major is conditional.

1. When the antecedent is asserted in the minor, that the consequent may be asserted in the conclusion; such is the preceding example. This is called arguing from the position of the antecedent to the position of the consequent.

2. When the consequent is contradicted in the minor proposition, that the antecedent may be contradicted in the conclusion: As, If atheists are in the right, then the world exists without a cause; but the world does not exist without a cause; therefore atheists are not in the right. This is called arguing from the removing of the consequent to the removing of the antecedent.

To remove the antecedent or consequent here, does not merely signify the denial of it, but the contradiction of it; for the mere denial of it by a contrary proposition will not make a true syllogism, as appears thus: If every creature be reasonable, every brute is reasonable; but no brute is reasonable; therefore no creature is reasonable. Whereas, if you say in the minor, but every brute is not reasonable, then it would follow truly in the conclusion, therefore every creature is not reasonable.

When the antecedent or consequent are negative propositions, they are removed by an affirmative; as, If there be no God, then the world does not discover creating wisdom; but the world does discover creating wisdom; therefore there is a God. In this instance the consequent is removed or contradicted in the minor, that the antecedent may be contradicted in the conclusion. So this argument of St. Paul, 1 *Cor.* xv. If the dead rise not, Christ died in vain; but Christ did not die in vain; therefore the dead shall rise.

There are also two sorts of false arguing, namely, 1. From the removing of the antecedent to the removing of the consequent; or, 2. From the position of the consequent, to the position of the antecedent. Examples of these are easily framed; as,

1. If a minister were a prince, he must be honoured; but a minister is not a prince; therefore he must not be honoured.

2. If a minister were a prince, he must be honoured; but a minister must be honoured; therefore he is a prince.

Who sees not the ridiculous falsehood of both these syllogisms?

Observation I. If the subject of the antecedent and the consequent be the same, then the hypothetical syllogism may be turned into a categorical one; as, If Cæsar be a king, he must be honoured; but Cæsar is a king; therefore, &c. This may be changed thus, Every king must be honoured; but Cæsar is a king; therefore, &c.

Observation II. If the major proposition only be conditional, the conclusion is categorical: But if the minor, or both, be conditional, the conclusion is also conditional; as, The worshippers of images are idolaters; if the papists worship a crucifix, they are worshippers of an image; therefore if the papists worship a crucifix, they are idolaters. But this sort of syllogisms should be avoided as much as possible in disputation, because they greatly embarrass a cause: The syllogisms, whose major only is hypothetical, are very frequent, and used with great advantage.

II. A disjunctive syllogism is when the major proposition is disjunctive; as, The earth moves in a circle or an ellipsis; but it does not move in a circle; therefore it moves in an ellipsis.

A disjunctive syllogism may have many members or parts; thus, It is either spring, summer, autumn, or winter; but it is not spring, autumn, or winter; therefore it is summer.

The true method of arguing here is from the assertion of one, to the denial of the rest, or from the denial of one or more, to the assertion of what remains; but the major should be so framed, that the several parts of it cannot be true together, though one of them is evidently true.

III. A relative syllogism requires the major proposition to be relative; as, Where Christ is, there shall his servants be; but Christ is in heaven; therefore his servants shall be there also. Or, As is the captain, so are his soldiers; but the captain is a coward; therefore his soldiers are so too.

Arguments that relate to the doctrine of proportion must be referred to this head; as, As two are to four, so are three to six; but two make the half of four; therefore three make the half of six.

Besides these, there is another sort of syllogism which is very natural and common, and yet authors take very little notice of it, call it by an improper name, and describe it very defectively; and that is,

IV. A connexive syllogism. This some have called copulative; but it does by no means require the major to be a copulative nor a compound proposition, according to the definition given of it, Part II. Chap. II. Sect. 6. but it requires that two or more ideas be so connected either in the complex subject or predicate of the major, that if one of them be affirmed or denied in the minor, common sense will naturally shew us what will be the consequence. It would be very tedious and useless to frame particular rules about them, as will appear by the following examples, which are very various, and yet may be farther multiplied.

1. Meekness and humility always go together; Moses was a man of meekness; there-

fore Moses was also humble. Or we may form this minor, Pharaoh was no humble man; therefore he was not meek.

2. No man can serve God and mammon; the covetous man serves mammon; therefore he cannot serve God. Or the minor may run thus, The true Christian serves God; therefore he does not serve mammon.

3. Genius must join with study to make a great man; Florino has genius, but he cannot study; therefore Florino will never be a great man. Or thus, Quintus studies hard, but has no genius; therefore Quintus will never be a great man.

4. Gulo cannot make a dinner without flesh and fish; there was no fish to be gotten to-day; therefore Gulo this day cannot make a dinner.

5. London and Paris are in different latitudes; the latitude of London is $51\frac{1}{2}$ degrees; therefore this cannot be the latitude of Paris.

6. Joseph and Benjamin had one mother; Rachel was the mother of Joseph; therefore she was Benjamin's mother too.

7. The father and the son are of equal stature; the father is six feet high; therefore the son is six feet high also.

8. Pride is inconsistent with innocence; angels have innocence; therefore they have no pride. Or thus, Devils have pride; therefore they have not innocence.

I might multiply other instances of these connexive syllogisms, by bringing in all sorts of exceptive, exclusive, comparative, and modal propositions into the composition of them; for all these may be wrought into conjunctive, as well as into simple syllogisms, and thereby we may render them complex. But it would waste time and paper without equal profit.

Concerning these various kinds of conjunctive syllogisms, take these two observations.

Observation I. Most of them may be transformed into categorical syllogisms, by those who have a mind to prove the truth of them that way; or they may be easily converted into each other by changing the forms of speech.

Observation II. These conjunctive syllogisms are seldom deficient or faulty in the form of them; for such a deficiency would be discovered at first glance generally by common reason, without any artificial rules of logick: The chief care therefore is to see that the major proposition be true, upon which the whole force of the argument usually depends.

SECTION VI.

OF COMPOUND SYLLOGISMS.

We properly call those compound syllogisms, which are made of two or more single syllogisms, and may be resolved into them. The chief kinds are these: Epichirema, Dilemma, Prosyllogismus, and Sorites.

1. Epichirema is a syllogism which contains the proof of the major or minor, or both, before it draws the conclusion. This is often used in writing, in public speeches, and in common conversation; that so each part of the discourse may be confirmed and put out of doubt, as it moves on toward the conclusion, which was chiefly designed. Take this instance:

Sickness may be good for us; for it weans us from the pleasures of life, and makes

us think of dying; but we are uneasy under sickness, which appears by our impatience, complaints, groanings, &c. therefore we are uneasy sometimes under that which is good for us.

Another instance you may see in Cicero's oration in defence of Milo, who had slain Clodius. His major proposition is, That it is lawful for one man to kill another who lies in wait to kill him, which he proves from the custom of nations, from natural equity, examples, &c.; his minor is, That Clodius laid wait for Milo; which he proves by his arms, guards, &c.; and then infers the conclusion, That it was lawful for Milo to kill Clodius.

II. A dilemma is an argument which divides the whole into all its parts or members by a disjunctive proposition, and then infers something concerning each part, which is finally inferred concerning the whole. Instances of this are frequent; as, In this life we must either obey our vicious inclinations, or resist them; to obey them will bring sin and sorrow; to resist them is laborious and painful; therefore we cannot be perfectly free from sorrow or pain in this life.

A dilemma becomes faulty or ineffectual three ways: First, when the members of the division are not well opposed, or not fully enumerated; for then the major is false. Secondly, When what is asserted concerning each part is not just; for then the minor is not true. Thirdly, When it may be retorted with equal force upon him who utters it.

There was a famous ancient instance of this case, wherein a dilemma was retorted. Euathlus promised Protagoras a reward when he had taught him the art of pleading, and it was to be paid the first day that he gained any cause in the court. After a considerable time Protagoras goes to law with Euathlus for the reward, and uses this dilemma: Either the cause will go on my side, or on yours: If the cause goes on my side, you must pay me according to the sentence of the judge: If the cause goes on your side, you must pay me according to your bargain: Therefore, whether the cause goes for me or against me, you must pay me the reward. But Euathlus retorted this dilemma thus: Either I shall gain the cause or lose it: If I gain the cause, then nothing will be due to you according to the sentence of the judge: But if I lose the cause, nothing will be due to you according to my bargain: Therefore, whether I lose or gain the cause, I will not pay you, for nothing will be due to you.

Note 1. A dilemma is usually described as though it always proved the absurdity, inconvenience, or unreasonableness of some opinion or practice; and this is the most common design of it; but it is plain, that it may also be used to prove the truth or advantage of any thing proposed; as, In heaven we shall either have desires, or not: If we have no desires, then we have full satisfaction; if we have desires, they shall be satisfied as fast as they arise; therefore in heaven we shall be completely satisfied.

Note 2. This sort of argument may be composed of three or more members, and may be called a trilemma.

III. A prosyllogism is when two or more syllogisms are so connected together, that the conclusion of the former is the major or minor of the following; as, Blood cannot think, but the soul of man thinks; therefore the soul of man is not blood; but the soul of a brute is his blood, according to the scripture; therefore the soul of man is different from the soul of a brute. See another instance in the Introduction to this Treatise.

IV. A sorites is when several middle terms are chosen to connect one another

successively in several propositions, till the last proposition connects its predicate with the first subject. Thus, All men of revenge have their souls often uneasy; uneasy souls are a plague to themselves; now to be one's own plague is folly in the extreme; therefore all men of revenge are extreme fools.

The apostle, *Rom.* viii. 29. gives us an instance of this sort of argument, if it were reduced to exact form: Whom he foreknew, those he predestinated; whom he predestinated he called; whom he called he justified; whom he justified he glorified; therefore whom he foreknew he glorified.

To these syllogisms it may not be improper to add induction, which is, when from several particular propositions we infer one general; as, The doctrine of the Socinians cannot be proved from the Gospels, it cannot be proved from the Acts of the Apostles, it cannot be proved from the Epistles, nor the Book of Revelation; therefore it cannot be proved from the New Testament.

Note, This sort of argument is often defective, because there is not due care taken to enumerate all the particulars on which the conclusion should depend.

All these four kinds of syllogisms in this section may be called redundant, because they have more than three propositions. But there is one sort of syllogism which is defective, and is called an enthymem, because only the conclusion with one of the premises is expressed, while the other is supposed and reserved in the mind: Thus, There is no true religion without good morals; therefore a knave cannot be truly religious: Or thus, It is our duty to love our neighbours as ourselves; therefore there are but few who perform their duty.

Note, This is the most common sort of argument amongst mankind, both in writing and in speaking; for it would take up too much time, and too much retard the discourse, to draw out all our arguments in mood and figure. Besides, mankind love to have so much compliment paid to their understandings, as to suppose that they know the major or minor, which is suppressed and implied, when you pronounce the other premise and the conclusion.

If there be any debate about this argument, the syllogism must be completed in order to try its force and goodness, by adding the absent propositions.

SECTION VII.

OF THE MIDDLE TERMS, OF COMMON PLACES OR TOPICS, AND INVENTION OF ARGUMENTS.

The next division of syllogisms is according to the middle term, which is made use of in the proof of any proposition. Now the middle term, as we have hinted before, is often called argument, because the force of the syllogism depends upon it. We must make a little delay here to treat briefly of the doctrine of topics, or places whence middle terms or arguments are drawn.

All arts and sciences have some general subjects which belong to them, which are called topics or common places; because middle terms are borrowed, and arguments derived from them for the proof of the various propositions which we have occasion to discourse of. The topics of grammar are etymology, noun, verb, construction, signification, &c. The topics of logick are genus, species, difference, property, defini-

tion, division, &c. The topics of ontology, or metaphysics, are cause, effect, action, passion, identity, opposition, subject, adjunct, sign, &c. The topics of morality, or ethics, are law, sin, duty, authority, freedom of will, command, threatening, reward, punishment, &c. The topics of theology are God, Christ, faith, hope, worship, salvation, &c.

To these several topics there belong particular observations, axioms, canons, or rules*, which are laid down in their proper sciences; as,

Grammar hath such canons, namely, Words in a different construction obtain a different sense. Words derived from the same primitive may probably have some affinity in their original meaning, &c. Canons in logick are such as these, Every part of a division, singly taken, must contain less than the whole. A definition must be peculiar and proper to the thing defined. Whatever is affirmed or denied of the genus, may be affirmed or denied of the species, &c. Metaphysical canons are such as these: Final causes belong only to intelligent agents. If a natural and necessary cause operate, the effect will follow, &c. and there are large catalogues of many more in each distinct science.

Now it has been the custom of those who teach logick or rhetoric, to direct their disciples when they want an argument, to consult the several topics which are suited to their subjects of discourse, and to rummage over the definitions, divisions, and canons that belong to each topic. This is called the invention of an argument: And it is taught with much solemnity in some schools.

I grant there may be good use of this practice for persons of a lower genius, when they are to compose any discourse for the public; or for those of superior parts, to refresh their memory, and revive their acquaintance with a subject which has been long absent from their thoughts, or when their natural spirits labour under indisposition and languor: But when a man of moderate sagacity has made himself master of his theme, by just diligence and enquiry, he has seldom need to run knocking at the doors of all the topics, that he may furnish himself with argument or matter of speaking: And indeed it is only a man of sense and judgment that can use common places or topics well; for amongst this variety he only knows what is fit to be left out, as well as what is fit to be spoken.

By some logical writers this business of topics and invention is treated of in such a manner with mathematical figures and diagrams, filled with the barbarous technical words, *Napcas*, *Nipcis*, *Ropcos*, *Nosrop*, &c. as though an ignorant lad were to be led mechanically in certain artificial harnesses and trammels to find out arguments to prove or refute any proposition whatsoever, without any rational knowledge of the ideas. Now there is no need to throw words of contempt on such a practice: The very description of it carries reproof and ridicule in abundance.

* A canon is a proposition declaring some property of the subject, which is not expressed in the definition or division of it.

SECTION VIII.

OF SEVERAL KINDS OF ARGUMENTS AND DEMONSTRATIONS.

We proceed now to the division of syllogisms according to the middle term; and in this part of our treatise the syllogisms themselves are properly called arguments, and are thus distributed.

I. Arguments are called grammatical, logical, metaphysical, physical, moral, mechanical, theological, &c. according to the art, science, or subject, whence the middle term or topic is borrowed. Thus, if we prove that no man shall steal from his neighbour, because the scripture forbids it, this is a theological argument: If we prove it from the laws of the land, it is political: But if we prove it from the principles of reason and equity, the argument is moral.

II. Arguments are either certain and evident, or doubtful and merely probable.

Probable arguments are those whose conclusions are proved by some probable medium; as, This hill was once a church-yard, or a field of battle, because there are many human bones found here. This is not a certain argument, for human bones might have been conveyed there some other way.

Evident and certain arguments are called demonstrations; for they prove their conclusions by clear mediums and undoubted principles; and they are generally divided into these two sorts.

1. Demonstrations *à priori*, which prove the effect by its necessary cause; as, I prove the scripture is infallibly true, because it is the word of God, who cannot lie.

2. Demonstrations *à posteriori*, which infer the cause from its necessary effect: as, I infer there hath been the hand of some artificer here, because I find a curious engine. Or, I infer, there is a God, from the works of his wisdom in the visible world.

The last of these is called demonstratio τῦ ὅτι, because it proves only the existence of a thing: The first is named demonstratio τῦ διότι, because it shows also the cause of existence.

But *Note*, That though these two sorts of arguments are most peculiarly called demonstrations, yet generally any strong and convincing argument obtains that name; and it is the custom of mathematicians to call all their arguments demonstrations, from what medium soever they derive them.

III. Arguments are divided into artificial and inartificial.

An artificial argument is taken from the nature and circumstances of the things; and if the argument be strong, it produces a natural certainty; as, The world was first created by God, because nothing can create itself.

An inartificial argument is the testimony of another; and this is called original, when our information proceeds immediately from the persons concerned, or from eye or ear witnesses of a fact: It is called tradition, when it is delivered by the report of others.

We have taken notice before, that testimony is either divine or human. If the human testimony be strong, it produces a moral certainty; but divine testimony produces a supernatural certainty, which is far superior.

Note, Arguments taken from human testimony, as well as from laws and rules of equity, are called moral; and indeed the same name is also applied to every sort of

argument which is drawn from the free actions of God, or the contingent actions of men, wherein we cannot arise to a natural certainty, but content ourselves with a high degree of probability, which in many cases is scarce inferior to natural certainty.

IV. Arguments are either direct or indirect. It is a direct argument, where the middle term is such as proves the question itself, and infers that very proposition which was the matter of enquiry. An indirect or oblique argument proves or refutes some other proposition, and thereby makes the thing enquired appear to be true by plain consequence.

Several arguments are called indirect: As, 1. When some contradictory proposition is proved to be false, improbable, or impossible: Or when upon supposition of the falsehood, or denial of the original proposition, some absurdity is inferred. This is called a proof *per impossibile*, or a *reductio ad absurdum*. 2. When some other proposition is proved to be true which is less probable, and thence it follows that the original proposition is true, because it is more probable. This is an argument *ex minus probabili ad magis*. 3. When any other proposition is proved, upon which it was before agreed to yield the original question. This is an argument *ex concesso*.

V. There is yet another rank of arguments, which have Latin names; their true distinction is derived from the topics or middle terms which are used in them, though they are called an address to our judgment, our faith, our ignorance, our profession, our modesty, and our passions.

1. If an argument be taken from the nature or existence of things, and addressed to the reason of mankind, it is called *argumentum ad judicium*.

2. When it is borrowed from some convincing testimony, it is *argumentum ad fidem*, an address to our faith.

3. When it is drawn from any insufficient medium whatsoever, and yet the opposer has not skill to refute or answer it, this is *argumentum ad ignorantiam*, an address to our ignorance.

4. When it is built upon the professed principles or opinions of the person with whom we argue, whether the opinions be true or false, it is named *argumentum ad hominem*, an address to our professed principles. St. Paul often uses this argument when he reasons with the Jews, and when he says, I speak as a man.

5. When the argument is fetched from the sentiments of some wise, great, or good men, whose authority we reverence and hardly dare oppose, it is called *argumentum ad verecundiam*, an address to our modesty.

6. I add finally, When an argument is borrowed from any topics which are suited to engage the inclinations and passions of the hearers on the side of the speaker, rather than to convince the judgment, this is *argumentum ad passiones*, an address to the passions; or if it be made publicly, it is called *ad populum*, or an appeal to the people.

After all these divisions of syllogism, or argument arising from the middle term, there is one distinction proper to be mentioned, which arises from the premises. An argument is called uniform, when both the premises are derived from the same spring of knowledge, whether it be sense, reason, consciousness, human faith, or divine faith: But when the two premises are derived from different springs of knowledge, it is called a mixed argument.

Whether the conclusion must be called human or divine, when one or both premises

are matters of divine faith, but the conclusion is drawn by human reason, I leave to be disputed and determined in the schools of theology.

Thus the second chapter is finished, and a particular account given of all the chief kinds of syllogisms or arguments which are made use of among men, or treated of in logick, together with special rules for the formation of them, as far as is necessary.

If a syllogism agree with the rules which are given for the construction and regulation of it, it is called a true argument: If it disagree with these rules, it is a paralogism or false argument: But when a false argument puts on the face and appearance of a true one, then it is properly called a sophism or fallacy, which shall be the subject of the next chapter.

CHAPTER III.

THE DOCTRINE OF SOPHISMS.

FROM truth nothing can really follow but what is true: Whensoever therefore we find a false conclusion drawn from premises which seem to be true, there must be some fault in the deduction or inference; or else one of the premises is not true in the sense in which it is used in that argument.

When an argument carries the face of truth with it, and yet leads us into mistake, it is a sophism; and there is some need of a particular description of these fallacious arguments, that we may with more ease and readiness detect and solve them.

SECTION I.

OF SEVERAL KINDS OF SOPHISMS, AND THEIR SOLUTION.

As the rules of right judgment, and of good ratiocination, often coincide with each other, so the doctrine of prejudices, which was treated of in the Second Part of Logick, has anticipated a great deal of what might be said on the subject of sophisms; yet I shall mention the most remarkable springs of false argumentation, which are reduced by logicians to some of the following heads.

I. The first sort of sophism is called *ignoratio elenchi*, or a mistake of the question; that is, when something else is proved which has neither any necessary connection nor inconsistency with the thing enquired, and consequently gives no determination to the enquiry, though it may seem at first sight to determine the question; as, if any should conclude that St. Paul was not a native Jew, by proving that he was born a Roman: Or if they should pretend to determine that he was neither Roman nor Jew, by proving that he was born at Tarsus in Cilicia; these sophisms are refuted by shewing that all these three may be true; for he was born of jewish parents in the city of Tarsus, and by some peculiar privilege granted to his parents, or his native city, he was born a denizen of Rome. Thus there is neither of these three characters of the apostle inconsistent with each other, and therefore the proving one of them true does not refute the others.

Or if the question be proposed, Whether excess of wine can be hurtful to him that drinks it, and the sophister should prove that it revives his spirits, it exhilarates

his soul, it gives a man courage, and makes him strong and active, and then he takes it for granted that he has proved his point.

But the respondent may easily shew, that though wine may do all this, yet it may be finally hurtful both to the soul and body of him that drinks it to excess.

Disputers when they grow warm, are ready to run into this fallacy: They dress up the opinion of their adversary as they please, and ascribe sentiments to him which he doth not acknowledge; and when they have, with a great deal of pomp, attacked and confounded these images of straw of their own making, they triumph over their adversary as though they had utterly confuted his opinion.

It is a fallacy of the same kind which a disputant is guilty of, when he finds that his adversary is too hard for him, and that he cannot fairly prove the question first proposed; he then with slyness and subtlety turns the discourse aside to some other kindred point which he can prove, and exults in that new argument wherein his opponent never contradicted him.

The way to prevent this fallacy is by keeping the eye fixed on the precise point of dispute, and neither wandering from it ourselves, nor suffering our antagonist to wander from it, or substitute any thing else in its room.

II. The next sophism is called *petitio principii*, or a supposition of what is not granted; that is, when any proposition is proved by the same proposition in other words, or by something that is equally uncertain and disputed: As, if any one undertake to prove that the human soul is extended through all the parts of the body, because it resides in every member, which is but the same thing in other words. Or, if a papist should pretend to prove that his religion is the only catholic religion, and is derived from Christ and his apostles, because it agrees with the doctrine of all the fathers of the church, all the holy martyrs, and all the christian world throughout all ages: Whereas this is the great point in contest, whether their religion does agree with that of all the ancients and the primitive Christians, or no.

III. That sort of fallacy which is called a *circle*, is very near akin to the *petitio principii;* as when one of the premises in a syllogism is questioned and opposed, and we intend to prove it by the conclusion: Or, when in a train of syllogisms we prove the last by recurring to what was the conclusion of the first. The papists are famous at this sort of fallacy, when they prove the scripture to be the word of God by the authority or infallible testimony of their church; and when they are called to shew the infallible authority of their church, they pretend to prove it by the scripture.

IV. The next kind of sophism is called *non causa pro causa*, or the assignation of a false cause. This the peripatetick philosophers were guilty of continually, when they told us that certain beings, which they called substantial forms, were the springs of colour, motion, vegetation, and the various operations of natural beings in the animate and inanimate world; when they informed us that nature was terribly afraid of vacuum; and that this was the cause why the water would not fall out of a long tube if it was turned upside down; the moderns, as well as the ancients, fall often into this fallacy, when they positively assign the reasons of natural appearances, without sufficient experiments to prove them.

Astrologers are over-run with this sort of fallacies, and they cheat the people grossly by pretending to tell fortunes, and to deduce the cause of the various occurrences in

the lives of men from the various positions of the stars and planets, which they call aspects.

When comets and eclipses of the sun and moon are construed to signify the fate of princes, the revolution of states, famine, wars, and calamities of all kinds, it is a fallacy that belongs to this rank of sophisms.

There is scarce any thing more common in human life than this sort of deceitful argument. If any two accidental events happen to concur, one is presently made the cause of the other. If Titius wronged his neighbour of a guinea, and in six months after he fell down and broke his leg, weak men will impute it to the divine vengeance on Titius for his former injustice. This sophism was found also in the early days of the world: For when holy Job was surrounded with uncommon miseries, his own friends inferred that he was a most heinous criminal, and charged him with aggravated guilt as the cause of his calamities; though God himself by a voice from heaven solved this uncharitable sophism, and cleared his servant Job of that charge.

How frequent is it among men to impute crimes to wrong persons? We too often charge that upon the wicked contrivance and premeditated malice of a neighbour, which arose merely from ignorance, or from unguarded temper. And, on the other hand, when we have a mind to excuse ourselves, we practise the same sophism, and charge that upon our inadvertence or our ignorance, which perhaps was designed wickedness. What is really done by a necessity of circumstances, we sometimes impute to choice. And again, we charge that upon necessity which was really desired and chosen.

Sometimes a person acts out of judgment, in opposition to his inclination; another person perhaps acts the same thing out of inclination, and against his judgment. It is hard for us to determine with assurance what are the inward springs and secret causes of every man's conduct; and therefore we should be cautious and slow in passing a judgment where the case is not exceeding evident; and if we should mistake, let it rather be on the charitable, than on the censorious side.

It is the same sophism that charges mathematical learning with leading the minds of men to scepticism and infidelity, and as unjustly accuses the new philosophy of paving the way to heresy and schism. Thus the reformation from popery has been charged with the murder and blood of millions, which in truth is to be imputed to the tyranny of the princes and the priests, who would not suffer the people to reform their sentiments and their practices according to the word of God. Thus Christianity in the primitive ages was charged by the heathens with all the calamities which befel the Roman empire, because the Christians renounced the heathen gods and idols.

The way to relieve ourselves from those sophisms, and to secure ourselves from the danger of falling into them, is an honest and diligent enquiry into the real nature and causes of things, with a constant watchfulness against all those prejudices that might warp the judgment aside from truth in that enquiry.

The next is called *fallacia accidentis*, or a sophism wherein we pronounce concerning the nature and essential properties of any subject according to something which is merely accidental to it. This is akin to the former, and is also very frequent in human life. So if opium, or the Peruvian bark, has been used imprudently or unsuccessfully, whereby the patient has received injury, some weaker people absolutely pronounce against the use of the bark or opium upon all occasions whatsoever, and are ready to

call them poison. So wine has been the accidental occasion of drunkenness and quarrels; learning and printing may have been the accidental cause of sedition in a state; the reading of the Bible, by accident, has been abused to promote heresies or destructive errors; and for these reasons they have all been pronounced evil things. Mahomet forbade his followers the use of wine; the Turks discourage learning in their dominion; and the papists forbid the scripture to be read by the laity. But how very unreasonable are these inferences, and these prohibitions which are built upon them!

VI. The next sophism borders upon the former; and that is, when we argue from that which is true in particular circumstances, to prove the same thing true absolutely, simply, and abstracted from all circumstances; this is called in the schools a sophism *à dicto secundum quid ad dictum simpliciter;* as, That which is bought in the shambles is eaten for dinner; raw meat is bought in the shambles; therefore raw meat is eaten for dinner. Or thus, Livy writes fables and improbabilities, when he describes prodigies and omens; therefore Livy's Roman History is never to be believed in any thing. Or thus, There may be some mistake of transcribers in some part of scripture; therefore scripture alone is not a safe guide for our faith.

This sort of sophism has its reverse also; as when we argue from that which is true simply and absolutely, to prove the same thing true in all particular circumstances whatsoever*; as if a traitor should argue from the sixth commandment, Thou shalt not kill a man, to prove that he himself ought not to be hanged: Or if a madman should tell me, I ought not to withhold his sword from him, because no man ought to withhold the property of another.

These two last species of sophisms are easily solved, by shewing the difference betwixt things in their absolute nature, and the same things surrounded with peculiar circumstances, and considered in regard to special times, places, persons, and occasions; or by shewing the difference between a moral and a metaphysical universality, and that the proposition will hold good in one case, but not in the other.

VII. The sophisms of composition and division come next to be mentioned.

The sophism of composition is when we infer any thing concerning ideas in a compounded sense, which is only true in a divided sense. And when it is said in the gospel that Christ made the blind to see, and the deaf to hear, and the lame to walk, we ought not to infer hence that Christ performed contradictions; but those who were blind before, were made to see, and those who were deaf before, were made to hear, &c. So when the scripture assures us, the worst of sinners may be saved; it signifies only, that they who have been the worst of sinners may repent and be saved, not that they shall be saved in their sins. Or if any one should argue thus, Two and three are even and odd; five are two and three; therefore five are even and odd. Here that is very falsely inferred concerning two and three in union, which is only true of them divided.

The sophism of division is when we infer the same thing concerning ideas in a divided sense, which is only true in a compounded sense; as, if we should pretend to prove that every soldier in the Grecian army put a hundred thousand Persians to flight, because the Grecian soldiers did so. Or if a man should argue thus, Five is one number; two and three are five; therefore two and three are one number.

* This is arguing from a moral universality, which admits of some exceptions, in the same manner as may be argued from metaphysical or a natural universality, which admits of no exceptions.

This sort of sophisms is committed when the word all is taken in a collective and a distributive sense, without a due distinction; as, if any one should reason thus; All the musical instruments of the jewish temple made a noble concert; the harp was a musical instrument of the jewish temple; therefore the harp made a noble concert.

Here the word all in the major is collective, whereas such a conclusion requires that the word all should be distributive.

It is the same fallacy when the universal word, all or no, refers to species in one proposition, and to individuals in another; as, All animals were in Noah's ark; therefore no animals perished in the flood; whereas in the premise all animals signifies every kind of animals, which does not exclude or deny the drowning of a thousand individuals.

VIII. The last sort of sophisms arises from our abuse of the ambiguity of words, which is the largest and most extensive kind of fallacy; and indeed several of the former fallacies might be reduced to this head.

When the words or phrases are plainly equivocal, they are called sophisms of equivocation; as, if we should argue thus: He that sends forth a book into the light desires it to be read; he that throws a book into the fire, sends it into the light; therefore he that throws a book into the fire desires it to be read.

This sophism, as well as the foregoing, and all of the like nature, are solved by shewing the different senses of the words, terms, or phrases. Here light in the major proposition signifies the public view of the world; in the minor it signifies the brightness of flame and fire; and therefore the syllogism has four terms, or rather it has no middle term, and proves nothing.

But where such gross equivocations and ambiguities appear in arguments, there is little danger of imposing upon ourselves or others. The greatest danger, and which we are perpetually exposed to in reasoning, is where the two senses or significations of one term are near akin and not plainly distinguished, and yet they are really sufficiently different in their sense to lead us into great mistakes, if we are not watchful. And indeed the greatest part of controversies, in the sacred or civil life, arise from the different senses that are put upon words, and the different ideas which are included in them; as have been shewn at large in the First Part of Logick, Chap. IV. which treats of words and terms.

There is, after all these, another sort of sophism which is wont to be called an imperfect enumeration, or a false induction, when from a few experiments or observations men infer general theorems and universal propositions. But this is sufficiently noticed in the foregoing chapter, where we treated of that sort of syllogism which is called induction.

SECTION II.

TWO GENERAL TESTS OF TRUE SYLLOGISMS, AND METHODS OF SOLVING ALL SOPHISMS.

Besides the special description of true syllogisms and sophisms already given, and the rules by which the one are framed and the other refuted, there are these two general methods of reducing all syllogisms whatsoever to a test of their truth or falsehood.

I. The first is, that the premises must, at least implicitly, contain the conclusion; or thus, one of the premises must contain the conclusion, and the other must shew that

the conclusion is contained in it. The reason of this rule is this; when any proposition is offered to be proved, it is necessary to find another proposition which confirms it, which may be called the containing proposition; but because the second must not contain the first in an express manner, and in the same words,* therefore it is necessary that a third or ostensive proposition be found out, to shew that the second proposition contains the first, which was to be proved. Let us make an experiment of this syllogism: Whosoever is a slave to his natural inclinations is miserable; the wicked man is a slave to his natural inclinations; therefore the wicked man is miserable. Here it is evident that the major proposition contains the conclusion; for under the general character of a slave to natural inclinations, a wicked man is contained or included; and the minor proposition declares it; whence the conclusion is evidently deduced, that the wicked man is miserable.

In many affirmative syllogisms we may suppose either the major or the minor to contain the conclusion, and the other to shew it; for there is no great difference. But in negative syllogisms it is the negative proposition that contains the conclusion, and the affirmative proposition shews it; as, Every wise man masters his passions; no angry man masters his passions; therefore no angry man is wise. Here it is more natural to suppose the minor to be the containing proposition; it is the minor implicitly denies wisdom concerning an angry man, because mastering the passions is included in wisdom, and the major shews it.

Note, This rule may be applied to complex and conjunctive, as well as simple syllogisms, and is adapted to shew the truth or falsehood of any of them.

II. The second is this: As the terms in every syllogism are usually repeated twice, so they must be taken precisely in the same sense in both places: For the greatest part of mistakes that arise in forming syllogisms, is derived from some little difference in the sense of one of the terms in the two parts of the syllogism wherein it is used. Let us consider the following sophisms:

1. It is a sin to kill a man; a murderer is a man; therefore it is a sin to kill a murderer. Here the word kill in the first proposition signifies to kill unjustly, or without law; in the conclusion, it is taken absolutely for putting a man to death in general, and therefore the inference is not good.

2. What I am, you are not; but I am a man; therefore you are not a man. This is a relative syllogism: But if it be reduced to a regular categorical form, it will appear there is ambiguity in the terms, thus: What I am, is a man; you are not what I am; therefore you are not a man. Here what I am in the major proposition is taken specially for my nature; but in the minor proposition the same words are taken individually for my person; therefore the inference must be false, for the syllogism does not take the term what I am both times in the same sense.

3. He that says you are an animal, says true; but he that says you are a goose, says you are an animal; therefore he that says you are a goose, says true. In the major proposition the word animal is the predicate of an incidental proposition; which incidental proposition being affirmative renders the predicate of it particular, according to Chap. II. Sect. 2. Axiom 3. and consequently the word animal there signifies only human animality. In the minor proposition the word animal, for the same reason,

* It is confessed that conditional and disjunctive major propositions do expressly contain all that is in the conclusion; but then it is not in a certain and conclusive manner, but only in a dubious form of speech, and mingled with other terms; and therefore it is not the same express proposition.

signifies the animality of a goose; whereby it becomes an ambiguous term, and unfit to build the conclusion upon. Or if you say, the word animal in the minor is taken for human animality, then the minor is evidently false.

It is from this last general test of syllogisms, that we derive the custom of the respondent in answering the arguments of the opponent, which is to distinguish upon the major or minor proposition, and declare which term is used in two senses, and in what sense the proposition may be true, and in what sense it is false.

CHAPTER IV.

SOME GENERAL RULES TO DIRECT OUR REASONING.

MOST of the general and special directions given to form our judgments aright in the preceding part of Logick might be rehearsed here; for the judgments which we pass upon things are generally built on some secret reasoning or argument by which the proposition is supposed to be proved. But there may be yet some farther assistances given to our reasoning powers in their search after truth, and an observation of the following rules will be of great importance for that end:

Rule I. Accustom yourselves to clear and distinct ideas, to evident propositions, to strong and convincing arguments. Converse much with those friends, and those books, and those parts of learning, where you meet with the greatest clearness of thought and force of reasoning. The mathematical sciences, and particularly arithmetic, geometry, and mechanics, abound with these advantages: And if there were nothing valuable in them for the uses of human life, yet the very speculative parts of this sort of learning are well worth our study; for by perpetual examples they teach us to conceive with clearness, to connect our ideas and propositions in a train of dependence, to reason with strength and demonstration, and to distinguish between truth and falsehood. Something of these sciences should be studied by every man who pretends to learning, and that, as Mr. Locke expresses it, not so much to make us mathematicians, as to make us reasonable creatures.

We should gain such a familiarity with evidence of perception and force of reasoning, and get such a habit of discerning clear truths, that the mind may be soon offended with obscurity and confusion: Then we shall, as it were, naturally and with ease restrain our minds from rash judgment, before we attain just evidence of the proposition which is offered to us; and we shall with the same ease, and, as it were, naturally, seize and embrace every truth that is proposed with just evidence.

This habit of conceiving clearly, of judging justly, and of reasoning well, is not to be attained merely by the happiness of constitution, the brightness of genius, the best natural parts, or the best collection of logical precepts. It is custom and practice that must form and establish this habit. We must apply ourselves to it till we perform all this readily, and without reflecting on rules. A coherent thinker, and a strict reasoner, is not to be made at once by a set of rules, any more than a good painter or musician may be formed extempore, by an excellent lecture on music or painting. It is of infinite importance therefore in our younger years, to be taught both the value and the practice of conceiving clearly and reasoning right: For when we are grown up to the middle of life, or past it, it is no wonder that we should not learn good reasoning, any

more than that an ignorant clown should not be able to learn fine language, dancing, or a courtly behaviour, when his rustic airs have grown up with him till the age of forty.

For want of this care, some persons of rank and education dwell all their days among obscure ideas; they conceive and judge always in confusion, they take weak arguments for demonstration, they are led away with the disguises and shadows of truth. Now if such persons happen to have a bright imagination, a volubility of speech, and a copiousness of language, they not only impose many errors upon their own understandings, but they stamp the image of their own mistakes upon their neighbours also, and spread their errors abroad.

It is a matter of just lamentation and pity, to consider the weakness of the common multitude of mankind in this respect, how they receive any thing into their assent upon the most trifling grounds. True reasoning hath very little share in forming their opinions. They resist the most convincing arguments by an obstinate adherence to their prejudices, and believe the most improbable things with the greatest assurance. They talk of the abstrusest mysteries, and determine upon them with the utmost confidence, and without just evidence either from reason or revelation. A confused heap of dark and inconsistent ideas make up a good part of their knowledge in matters of philosophy as well as religion, having never been taught the use and value of clear and just reasoning.

Yet it must be still confessed that there are some mysteries in religion, both natural and revealed, as well as some abstruse points in philosophy, wherein the wise as well as the unwise must be content with obscure ideas. There are several things, especially relating to the invisible world, which are unsearchable in our present state, and therefore we must believe what revelation plainly dictates, though the ideas may be obscure. Reason itself demands this of us: But we should seek for the brightest evidence both of ideas, and of the connection of them, wheresoever it is attainable.

Rule II. Enlarge your general acquaintance with things daily, in order to attain a rich furniture of topics, or middle terms, whereby those propositions which occur may be either proved or disproved; but especially meditate and enquire with great diligence and exactness into the nature, properties, circumstances, and relations of the particular subject about which you judge or argue. Consider its causes, effects, consequences, adjuncts, opposites, signs, &c. so far as is needful to your present purpose. You should survey a question round about, and on all sides, and extend your views as far as possible, to every thing that has a connection with it. This practice has many advantages in it; as,

1. It will be a means to suggest to your mind proper topics for argument about any proposition that relates to the same subject.

2. It will enable you with greater readiness and justness of thought to give an answer to any sudden question upon that subject, whether it arises in your own mind, or be proposed by others.

3. This will instruct you to give a plainer and speedier solution of any difficulties that may attend the theme of your discourse, and to refute the objections of those who have espoused a contrary opinion.

4. By such a large survey of the whole subject in all its properties and relations, you will be better secured from inconsistencies, that is, from asserting or denying any thing in one place, which contradicts what you have asserted or denied in another:

And to attain these ends, an extensiveness of understanding, and a large memory, are of unspeakable service.

One would be ready to wonder sometimes how easily great and wise and learned men are led into assertions, in some parts of the same treatise, which are found to be scarce consistent with what they have asserted in other places: But the true reason is, the narrowness of the mind of man, that it cannot take in all the innumerable properties and relations of one subject with a single view; and therefore whilst they are intent on one particular part of their theme, they bend all their force of thought to prove or disprove some proposition that relates to that part, without a sufficient attention to the consequences which may flow from it, and which may unhappily affect another part of the same subject: And by this means they are sometimes led to say things which are inconsistent. In such a case, the great dealers in dispute and controversy take pleasure to cast nonsense and self-contradiction on their antagonist with huge and hateful reproaches. For my part, I rather choose to pity human nature, whose necessary narrowness of understanding exposes us all to some degrees of this frailty. But the most extensive survey possible of our whole subject is the best remedy against it. It is our judging and arguing upon a partial view of things, that exposes us to mistakes, and pushes us into absurdities, or at least to the very borders of them.

Rule III. In searching the knowledge of things, always keep the precise point of the present question in your eye. Take heed that you add nothing to it while you are arguing, nor omit any part of it. Watch carefully, lest any new ideas slide in to mingle themselves either with the subject or the predicate. See that the question be not altered by the ambiguity of any word taken in different senses; nor let any secret prejudices of your own, or the sophistical arts of others, cheat your understanding by changing the question, or shuffling in any thing else in its room.

And for this end it is useful to keep the precise matter of inquiry as simple as may be, and disengaged from a complication of ideas, which do not necessarily belong to it. By admitting a complication of ideas, and taking too many things at once into one question, the mind is sometimes dazzled and bewildered, and the truth is lost in such a variety and confusion of ideas; whereas by limiting and narrowing the question, you take a fuller survey of the whole of it.

By keeping the single point of inquiry in our constant view, we shall be secured from sudden, rash, and impertinent responses and determinations, which some have obtruded instead of solutions and solid answers, before they perfectly knew the question.

Rule IV. When you have exactly considered the precise point of inquiry, or what is unknown in the question, then consider what, and how much you know already of this question, or of the ideas and terms of which it is composed. It is by a comparison of the known and unknown parts of the question together, that you find what reference the part known hath unto, or what connection it hath with the thing that is sought: Those ideas, whereby the known and unknown parts of the question are connected, will furnish you with middle terms or arguments, whereby the thing proposed may be proved or disproved.

In this part of your work, namely, comparing ideas together, take due time, and be not too hasty to come to a determination, especially in points of importance. Some men when they see a little agreement or disagreement between ideas, they presume a

great deal, and so jump into a conclusion. This is a short way to fancy, opinion, and conceit, but a most unsafe and uncertain way to true knowledge and wisdom.

Rule V. In choosing your middle terms or arguments to prove any question, always take such topics as are surest and least fallible, and which carry the greatest evidence and strength with them. Be not so solicitous about the number, as the weight of your arguments, especially in proving any proposition which admits of natural certainty, or of complete demonstration. Many times we do injury to a cause by dwelling upon trifling arguments. We amuse our hearers with uncertainties, by multiplying the number of feeble reasonings, before we mention those which are more substantial, conclusive, and convincing. And too often we yield up our own assent to mere probable arguments, where certain proofs may be obtained. Yet it must be confessed there are many cases wherein the growing number of probable arguments increases the degree of probability, and gives a great and sufficient confirmation to the truth which is sought; as,

1. When we are enquiring the true sense of any word or phrase, we are more confirmed in the signification of it, by finding the same expression so used in several authors, or in several places of the same author.

2. When we are searching out the true meaning or opinion of any writer, or enquiring into any sacred doctrine of scripture, we come to a surer determination of the truth by several distinct places wherein the same thing is expressed or plainly implied; because it is not so probable that an honest skilful reader should mistake the meaning of the writer in many places, as he may in one or two.

3. When we would prove the importance of any scriptural doctrine or duty, the multitude of texts, wherein it is repeated and inculcated upon the reader, seems naturally to instruct us that it is a matter of greater importance, than other things which are but slightly or singly mentioned in the Bible.

4. In searching out matters of fact in times past, or in distant places, in which case moral evidence is sufficient, and moral certainty is the utmost which can be attained, here we derive a greater assurance of the truth of it by a number of persons, or a multude of circumstances concurring to bear witness to it.

5. From many experiments in natural philosophy, we more safely infer a general theorem, than we can from one or two.

6. In matters which require present practice, both sacred and civil, we must content ourselves oftentimes with a mere preponderation of probable reasons or arguments. Where there are several reasons on each side, for and against a thing that is to be done or omitted, a small argument added to the heap may justly turn the balance on one side, and determine the judgment, as I have noted in the Second Part of Logick.

To conclude; a growing acquaintance with matters of learning, and a daily improvement of our understandings in affairs human and divine, will best teach us to judge and distinguish in what cases the number of arguments adds to their weight and force. It is only experience can fully inform us when we must be determined by probable topics, and when we must seek and expect demonstrations.

Rule VI. Prove your conclusion, as far as possible, by some propositions that are in themselves more plain, evident, and certain, than the conclusion; or at least such as are more known, and more intelligible to the person whom you would convince. If we neglect this rule, we shall endeavour to enlighten that which is obscure by something

equally or more obscure, and to confirm that which is doubtful by something equally or more uncertain. Common sense dictates to all men, that it is impossible to establish any truth, and to convince others of it, but by something that is better known to them than that truth is.

Rule VII. Labour in all your arguings to enlighten the understanding, as well as to conquer and captivate the judgment. Argue in such a manner as may give a natural, distinct, and solid knowledge of things to your hearers, as well as to force their assent by a mere proof of the question. Now to attain this end, the chief topic or medium of your demonstration should be fetched as much as possible from the nature of the thing to be proved, or from those things which are most naturally connected with it. Geometricians sometimes break this rule without necessity, two ways; namely,

1. When they prove one proposition only by shewing what absurdities will follow if the contradictory proposition be supposed or admitted. This is called *reductio ad absurdum**, or *demonstratio per impossibile.* As for instance, when they prove all the radii of a circle to be equal, by supposing one radius to be longer or shorter than another, and then shewing what absurd consequences will follow. This, I confess, forces the assent, but it does not enlighten the mind, by shewing the true reason and cause why all radii are equal, which is derived from the very construction of a circle: For since a circle is formed by fixing one end of a straight line in the centre, and moving the other end round (or, which is all one, by compasses kept open to a certain extent), it follows evidently that every part of the circumference being thus described, must be equally distant from the centre, and therefore the radii, which are lines from the centre to the circumference, must be all equal.

2. Geometricians forget this rule, when they heap up many far-fetched lines, figures, and proportions, to prove some plain, simple, and obvious proposition. This is called a demonstration *per aliena et remota,* or an argument from unnatural and remote mediums; as if, in order to prove the radii of a circle are all equal, I should make several triangles and squares about the circle, and then from some properties and propositions of squares and triangles prove that the radii of a circle are equal.

Yet it must be confessed, that sometimes such questions happen, that it is hardly possible to prove them by direct arguments drawn from the nature of things, &c. and then it may not only be lawful but necessary to use indirect proofs, and arguments drawn from remote mediums, or from the absurdity of the contradictory suppositions.

Such indirect and remote arguments may also be sometimes used to confirm a proposition, which has been before proved by arguments more direct and immediate.

Rule VIII. Though arguments should give light to the subject, as well as constrain the assent, yet you must learn to distinguish well between an explication and an argument, and neither impose upon yourselves, nor suffer yourselves to be imposed upon by others, by mistaking a mere illustration for a convincing reason.

Axioms themselves, or self-evident propositions, may want an explication or illustration, though they are not to be proved by reasoning.

* *Note,* This Rule chiefly refers to the establishment of some truth, rather than to the refutation of error. It is a very common and useful way of arguing, to refute a false proposition, by showing what evident falsehood or absurdity will follow from it; for what proposition soever is really absurd and false, does effectually prove that principle to be false from which it is derived, so that this way of refuting an error is not so usually called *reductio ad absurdum.*

Similitudes and allusions have oftentimes a very happy influence to explain some difficult truth, and to render the idea of it familiar and easy. Where the resemblance is just and accurate, the influence of a simile may proceed so far as to show the possibility of the thing in question: But similitudes must not be taken as a solid proof of the truth or existence of those things to which they have a resemblance. A too great deference paid to similitudes, or an utter rejection of them, seem to be two extremes, and ought to be avoided. The late ingenious Mr. Locke, even in his Enquiries after Truth, makes great use of similes for frequent illustration, and is very happy in the invention of them, though he warns us also lest we mistake them for conclusive arguments.

Yet let it be noted here, that a parable or a similitude used by any author, may give a sufficient proof of the true sense and meaning of that author, provided that we draw not this similitude beyond the scope and design for which it was brought; as when our Saviour affirms, *Rev.* iii. 3. I will come on thee as a thief: This will plainly prove that he describes the unexpectedness of his appearance, though it is by no means to be drawn to signify any injustice in his design.

Rule IX. In your whole course of reasoning, keep your mind sincerely intent on the pursuit of truth; and follow solid argument wheresoever it leads you. Let not a party spirit, nor any passion or prejudice whatsoever, stop or avert the current of your reasoning in quest of true knowledge.

When you are enquiring therefore into any subject, maintain a due regard to the arguments and objections on both sides of a question. Consider, compare, and balance them well, before you determine for one side. It is a frequent, but a very faulty practice, to hunt after arguments only to make good one side of a question, and entirely to neglect and refuse those which favour the other side. If we have not given a due weight to arguments on both sides, we do but wilfully misguide our judgment, and abuse our reason, by forbidding its search after truth. When we espouse opinions by a secret bias on the mind, through the influences of fear, hope, honour, credit, interest, or any other prejudice, and then seek arguments only to support those opinions, we have neither done our duty to God nor to ourselves; and it is a matter of mere chance if we stumble upon truth in our way to ease and preferment. The power of reasoning was given us by our Maker for this very end, to pursue truth; and we abuse one of his richest gifts, if we basely yield it up to be led astray by any of the meaner powers of nature, or the perishing interests of this life. Reason itself, if honestly obeyed, will lead us to receive the divine revelation of the gospel, where it is duly proposed, and this will show us the path of life everlasting.

LOGICK.

THE FOURTH PART.

OF DISPOSITION AND METHOD.

IT is not merely a clear and distinct idea, a well formed proposition, or a just argument, that is sufficient to search out and communicate the knowledge of a subject. There must be a variety and series of them, disposed in a due manner, in order to attain this end; and therefore it is the design of the Last Part of Logick to teach us the art of method. It is that must secure our thoughts from that confusion, darkness, and mistake, which unavoidably attend the meditations and discourses even of the brightest genius who despises the rules of it.

1. We shall here consider the nature of method, and the several kinds of it.
2. Lay down the general rules of method, with a few particulars under them.

CHAPTER I.

OF THE NATURE OF METHOD, AND THE SEVERAL KINDS OF IT, NAMELY, NATURAL AND ARBITRARY, SYNTHETIC AND ANALYTIC.

METHOD, taken in the largest sense, implies the placing of several things, or performing several operations, in such an order, as is most convenient to attain some end proposed: And in this sense it is applied to all the works of nature and art; to all the divine affairs of creation and providence; and to the artifices, schemes, contrivances, and practices of mankind, whether in natural, civil, or sacred affairs.

Now this orderly disposition of things includes the ideas of prior, posterior, and simultaneous; of superior, inferior, and equal; of beginning, end, and middle, &c. which are described more particularly among the general affections of being, in ontology.

But in logick method is usually taken in a more limited sense, and the nature of it is thus described: Method is the disposition of a variety of thoughts on any subject, in such order as may best serve to find out unknown truths, to explain and confirm truths that are known, or to fix them in the memory.

It is distributed into two general kinds, namely, natural and arbitrary.

Natural method is that which observes the order of nature, and proceeds in such a

manner, as that the knowledge of the things which follow depends in a great measure on the things which go before, and this is twofold, viz. synthetic and analytic, which are sometimes called synthesis and analysis.*

Synthetic method is that which begins with the parts,† and leads onward to the knowledge of the whole; it begins with the most simple principles and general truths, and proceeds by degrees to that which is drawn from them, or compounded of them: And therefore it is called the method of composition.

Analytic method takes the whole compound as it finds it, whether it be a species or an individual, and leads us into the knowledge of it, by resolving it into its first principles or parts, its generic nature, and its special properties; and therefore it is called the method of resolution.

As synthetic method is generally used in teaching the sciences after they are invented, so analytic is most practised in finding out things unknown. Though it must be confessed, that both methods are sometimes employed to find out truth and to communicate it.

If we know the parts of any subject easier and better than the whole, we consider the parts distinctly, and by putting them together, we come to the knowledge of the whole. So in grammar, we learn first to know letters, we join them to make syllables, out of syllables we compose words, and out of words we make sentences and discourses. So the physician or apothecary knows the nature and powers of his simples, namely, his drugs, his herbs, his minerals, &c. and putting them together, and considering their several virtues, he finds what will be the nature and powers of the bolus, or any compound medicine: This is the synthetic method.

But if we are better acquainted with the whole than we are with particular parts, then we divide or resolve the whole into its parts, and thereby gain a distinct knowledge of them. So in vulgar life we learn in the gross what plants or minerals are; and then by chemistry we gain the knowledge of salt, sulphur, spirit, water, earth, which are the principles of them. So we are first acquainted with the whole body of an animal, and then by anatomy or dissection, we come to learn all the inward and outward parts of it. This is the analytic method.

According to this most general and obvious idea of synthetic and analytic method,

* The word analysis has three or four senses, which it may not be improper to take notice of here.

1. It signifies the general and particular heads of a discourse, with their mutual connections, both co-ordinate and subordinate, drawn out by way of abstract into one or more tables, which are frequently placed like an index at the beginning or end of a book.

2. It signifies the resolving of a discourse into its various subjects and arguments, as when any writing of the ancient prophets is resolved into the prophetical, historical, doctrinal, and practical parts of it; it is said to be analysed in general. When a sentence is distinguished into the nouns, the verbs, pronouns, adverbs, and other particles of speech which compose it, then it is said to be analysed grammatically. When the same sentence is distinguished into subject, predicate, proposition, argument, act, object, cause, effect, adjunct, opposite, &c. then it is analysed logically and metaphysically. This last is what is chiefly meant in the theological schools, when they speak of analysing a text of scripture.

3. Analysis signifies particularly the science of algebra, wherein a question being proposed, one or more letters, as, x, y, z, or vowels, as, a, e, i, &c. are made use of to signify the unknown number, which being intermingled with several known numbers in the question, is at last, by the rules of art, separated or released from that entanglement, and its particular value is found out by shewing its equation, or equality to some known number.

4. It signifies analytical method, as here explained in logick.

† *Note*, It is confessed that synthesis often begins with the genus, and proceeds to the species and individuals. But the genus or generic nature is then considered only as a physical or essential part of the species, though it be sometimes called an universal or logical whole. Thus synthetic method maintains its own description still, for it begins with the parts, and proceeds to the whole, which is composed of them.

they differ from each other as the way which leads up from a valley to a mountain differs from itself, considered as it leads down from the mountain to the valley; or as St. Matthew and St. Luke prove Christ to be the son of Abraham: Luke finds it out by analysis, rising from Christ to his ancestors; Matthew teaches it in the synthetic method, beginning from Abraham, and shewing that Christ is found among his posterity. Therefore it is a usual thing in the sciences, when we have by analysis found out a truth, we use the synthetic method to explain and deliver it, and prove it to be true.

In this easy view of things, these two kinds of method may be preserved conspicuously, and entirely distinct; but the subjects of knowledge being infinite, and the ways whereby we arrive at this knowledge being almost infinitely various, it is very difficult, and almost impossible, always to maintain the precise distinction between these two methods.

This will evidently appear in the following observations:

Observation I. Analytic method being used chiefly to find out things unknown, it is not limited or confined merely to begin with some whole subject, and proceed to the knowledge of its parts, but it takes its rise sometimes from any single part or property, or from any thing whatsoever that belongs to a subject which happens to be first and most easily known, and thereby enquires into the more abstruse and unknown parts, properties, causes, effects, and modes of it, whether absolute or relative: As for instance,

1. Analysis finds out causes by their effects. So in the speculative part of natural philosophy, when we observe light, colours, motions, hardness, softness, and other properties and powers of bodies, or any of the common or uncommon appearances of things either on earth or in heaven, we search out the causes of them. So by the various creatures we find out the Creator, and learn his wisdom, power, and goodness.

2. It finds out effects by their causes. So the practical and mechanical part of natural philosophy considers such powers of motion, as the wind, the fire, and the water, &c. and then contrives what uses they may be applied to, and what will be their effects in order to make mills and engines of various kinds.

3. It finds out the general and special nature of a thing by considering the various attributes of the individuals, and observing what is common and what is proper, what is accidental and what is essential. So by surveying the colour, the shape, motion, rest, place, solidity, extension of bodies, we come to find that the nature of body in general is solid extension; because all other qualities of bodies are changeable, but this belongs to all bodies, and it endures through all changes; and because this is proper to body alone, and agrees not to any thing else; and it is the foundation of all other properties.

4. It finds out the remaining properties or parts of a thing, by having some parts or properties given. So the area of a triangle is found by knowing the height and the base. So by having two sides and an angle of a triangle given, we find the remaining side and angles. So when we know cogitation is the prime attribute of a spirit, we infer its immateriality, and thence its immortality.

5. Analysis finds the means necessary to attain a proposed end, by having the end first assigned. So in moral, political, economical affairs, having proposed the government of self, a family, a society, or a nation, in order to their best interest, we consider and search out what are the proper laws, rules, and means to effect it. So in the prac-

tices of artificers, and the manufactures of various kinds, the end being proposed, as, making cloth, houses, ships, &c. we find out ways of composing these things for the several uses of human life. But the putting any of these means in execution to attain the end, is synthetic method.

Many other particulars might be represented to shew the various forms of analytic method, whereby truth is found out, and some of them come very near to synthetic, so as hardly to be distinguished.

Observation II. Not only the investigation of truth, but the communication of it also is often practised in such a method, as neither agrees precisely to synthetic or analytic. Some sciences, if you consider the whole of them in general, are treated in synthetic order; so physics, or natural philosophy, begins usually with an account of the general nature and properties of matter or bodies, and by degrees descends to consider the particular species of bodies with their powers and properties; yet it is very evident, that when philosophers come to particular plants and animals, then by chemistry and anatomy they analyse or resolve those bodies into their several constituent parts. On the other hand, Logick is begun in analytic method; the whole is divided into its integral parts, according to the four operations of the mind: Yet here and there synthetic method is used in the particular branches of it, for it treats of ideas in general first, and then descends to the several species of them; it teaches us how propositions are made up of ideas, and syllogisms of propositions, which is the order of composition.

The ancient scholastic writers have taken a great deal of pains, and engaged in useless disputes about these two methods, and after all have not been able to give such an account of them as to keep them entirely distinct from each other, neither in the theory nor in the practice. Some of the moderns have avoided this confusion in some measure, by confining themselves to describe almost nothing else but the synthetic and analytic methods of geometricians and algebraists, whereby they have too much narrowed the nature and rules of method, as though every thing were to be treated in mathematical forms.

Upon the whole, I conclude, that neither of these two methods should be too scrupulously and superstitiously pursued, either in the invention or in the communication of knowledge. It is enough, if the order of nature be but observed in making the knowledge of things following depend on the knowledge of the things which go before. Oftentimes a mixed method will be found most effectual for these purposes; and indeed a wise and judicious prospect of our main end and design must regulate all method whatsoever.

Here the rules of natural method ought to be proposed, whether it be analytic, or synthetic, or mixed: But it is proper first to give some account of arbitrary method, lest it be thrust at too great a distance from the first mention of it.

Arbitrary method leaves the order of nature, and accommodates itself to many purposes; such as, to treasure up things and retain them in memory; to harangue and persuade mankind to any practice in the religious or the civil life; or to delight, amuse, or entertain the mind.

As for the assistance of the memory, in most things a natural order has a happy influence; for reason itself deducing one thing from another, greatly assists the memory by the natural connection and mutual dependence of things. But there are various

other methods which mankind have made use of for this purpose, and indeed there are some subjects that can hardly be reduced to analysis or synthesis.

In reading or writing history, some follow the order of the governors of a nation, and dispose every transaction under their particular reigns: So the sacred books of Kings and Chronicles are written. Some write in annals or journals, and make a new chapter of every year. Some put all those transactions together which relate to one subject; that is, all the affairs of one war, one league, one confederacy, one council, &c. though it lasted many years, and under many rulers.

So in writing the lives of men, which is called biography, some authors follow the tract of their years, and place every thing in the precise order of time when it occurred; others throw the temper and character of the persons, their private life, their public stations, their personal occurrences, their domestic conduct, their speeches, their books or writings, their sickness and death, into so many distinct chapters.

In chronology some writers make their epochas to begin all with one letter: So in the book called Ductor Historicus, the periods all begin with C; as, creation, cataclysm, or deluge, Chaldean empire, Cyrus, Christ, Constantine, &c. Some divide their accounts of time according to the four great monarchies; Assyrian, Persian, Grecian, and Roman. Others think it serves the memory best to divide all their subjects into the remarkable number of sevens; so Prideaux has written an Introduction to History. And there is a book of divinity called *Fasciculus Controversiarum*, by an author of the same name, written in the same method, wherein every controversy has seven questions belonging to it; though the order of nature seems to be too much neglected by a confinement to this septenary number.

Those writers and speakers whose chief business is to amuse or delight, to allure, terrify, or persuade mankind, do not confine themselves to any natural order, but in a cryptical or hidden method, adapt every thing to their designed ends. Sometimes they omit those things which might injure their design, or grow tedious to their hearers, though they seem to have a necessary relation to the point in hand: Sometimes they add those things which have no great reference to the subject, but are suited to allure or refresh the mind and the ear. They dilate sometimes, and flourish long upon little incidents, and they skip over, and but lightly touch the drier part of their theme. They place the first things last, and the last things first, with wondrous art, and yet so manage it as to conceal their artifice, and lead the senses and passions of their hearers into a pleasing and powerful captivity.

It is chiefly poesy and oratory that require the practice of this kind of arbitrary method; they omit things essential which are not beautiful, they insert little needless circumstances, and beautiful digressions, they invert times and actions, in order to place every thing in the most affecting light, and for this end in their practice they neglect all logical forms; yet a good acquaintance with the forms of logick and natural method is of admirable use to those who would attain these arts in perfection. Hereby they will be able to range their own thoughts in such a method and scheme, as to take a more large and comprehensive survey of their subject and design in all the parts of it; and by this means they will better judge what to choose and what to refuse; and how to dress and manage the whole scene before them, so as to attain their own ends with greater glory and success.

CHAPTER II.

THE RULES OF METHOD, GENERAL AND PARTICULAR.

THE general requisites of true method in the pursuit or communication of knowledge, may be all comprised under the following heads. It must be, 1. Safe. 2. Plain and easy. 3. Distinct. 4. Full, or without defect. 5. Short, or without superfluity. 6. Proper to the subject and the design. 7. Connected.

Rule I. Among all the qualifications of a good method, there is none more necessary and important than that it should be safe and secure from error; and to this end these four particular or special directions should be observed.

1. Use great care and circumspection in laying the foundations of your discourse, or your scheme of thoughts upon any subject. Those propositions which are to stand as first principles, and on which the whole argument depends, must be viewed on all sides with the utmost accuracy, lest an error, being admitted there, should diffuse itself through the whole subject. See therefore that your general definitions or descriptions are as accurate as the nature of the thing will bear: See that your general divisions and distributions be just and exact, according to the rules given in the First Part of Logick: See that your axioms be sufficiently evident, so as to demand the assent of those that examine them with due attention: See that your first and more immediate consequences from these principles be well drawn; and take the same care of all other propositions that have a powerful and spreading influence through the several parts of your discourse.

For want of this care sometimes a large treatise has been written by a long deduction of consequences from one or two doubtful principles, which principles have been effectually refuted in a few lines, and thus the whole treatise has been destroyed at once: So the largest and fairest building sinks and tumbles to the ground, if the foundations and corner-stones of it are feeble and insufficient.

2. It is a very advisable thing that your primary and fundamental propositions be not only evident and true, but they should be made a little familiar to the mind by dwelling upon them before you proceed farther. By this means you will gain so full an acquaintance with them, that you may draw consequences from them with much more freedom, with greater variety, brighter evidence, and with a firmer certainty, than if you have but a slight and sudden view of them.

3. As you proceed in the connection of your arguments, see that your ground be made firm in every step. See that every link of your chain of reasoning be strong and good: For if but one link be feeble and doubtful, the whole chain of arguments feels the weakness of it, and lies exposed to every objector, and the original question remains undetermined.

4. Draw up all your propositions and arguments with so much caution, and express your ideas with such a just limitation, as may preclude or anticipate any objections. Yet remember this is only to be done as far as it is possible, without too much intangling the question, or introducing complicated ideas and obscuring the sense. But if

such a cautious and limited dress of the question should render the ideas too much complicated, or the sense obscure, then it is better to keep the argument more simple, clear, and easy to be understood, and afterwards mention the objections distinctly in their full strength, and give a distinct answer to them.

Rule II. Let your method be plain and easy, so that your hearers, or readers, as well as yourself, may run through it without embarrassment, and may take a clear and comprehensive view of the whole scheme. To this end the following particular directions will be useful.

1. Begin always with those things which are best known, and most obvious, whereby the mind may have no difficulty or fatigue, and proceed by regular and easy steps to things that are more difficult. And as far as possible, let not the understanding, or the proof of any of your positions, depend on the positions that follow, but always on those which go before. It is a matter of wonder that in so knowing an age as this, there should be so many persons offering violence daily to this rule, by teaching the Latin language by a grammar written in Latin, which method seems to require a perfect knowledge of an unknown tongue, in order to learn the first rudiments of it.

2. Do not affect excessive haste in learning or teaching any science, nor hurry at once into the midst of it, lest you be too soon involved in several new and strange ideas and propositions, which cannot be well understood without a longer and closer attention to those which go before. Such sort of speed is but a waste of time, and will constrain you to take many steps backward again, if you would arrive at a regular and complete knowledge of the subject.

3. Be not fond of crowding too many thoughts and reasonings into one sentence or paragraph, beyond the apprehension or capacity of your readers or hearers. There are some persons of a good genius, and a capacious mind, who write and speak very obscurely upon this account; they affect a long train of dependencies before they come to a period; they imagine that they can never fill their page with too much sense; but they little think how they bury their own best ideas in the crowd, and render them in a manner invisible and useless to the greatest part of mankind. Such men may be great scholars, yet they are but poor teachers.

4. For the same reason, avoid too many subdivisions. Contrive your scheme of thoughts in such a manner as may finish your whole argument with as few inferior branchings as reason will admit: And let them be such as are obvious and open to the understanding, that they may come within one single view of the mind. This will not only assist the understanding to receive, but it will aid the memory also to retain truth; whereas a discourse cut out into a vast multitude of gradual subordinations has many inconveniences in it; it gives pain to the mind and memory, in surveying and retaining the scheme of discourse, and exposes the unskilful hearers to mingle the superior and inferior particulars together; it leads them into a thick wood instead of open day-light, and places them in a labyrinth, instead of a plain path.

5. Give all diligence in your younger years to obtain a clear and easy way of expressing your conceptions, that your words, as fast as you utter them, may stamp your own ideas exactly on the mind of the hearer. This is a most happy talent for the conveyance of truth, and an excellent security against mistakes and needless controversies.

Rule III. Let your method be distinct, and without the perplexing mixture of things that ought to be kept separate, and this will be easily practised by four directions.

1. Do not bring unnecessary heterogeneous* matter into your discourse on any subject; that is, do not mingle an argument on one subject with matters that relate entirely to another, but just so far as is necessary to give a clearer knowledge of the subject in hand. Examples in logick may be borrowed from any of the sciences to illustrate the rules: But long interpositions of natural philosophy, of the imagination and passions, of agency of spirits united to bodies, &c. break the thread of discourse, and perplex the subject.

2. Let every complicated theme or idea be divided into its distinct single parts, as far as the nature of the subject and your present design requires it. Though you must not abound in needless subdivisions, yet something of this work is very necessary; and it is a good judgment alone can dictate how far to proceed in it, and when to stop.

Compound ideas must be reduced to a simple form, in order to understand them well. You may easily master that subject in all the parts of it by regular succession, which would confound the understanding to survey them at once. So we come to the knowledge of a very perplexed diagram in geometry, or a complicated machine in mechanics, by having it parcelled out to us into its several parts and principles, according to this and the foregoing rule of method.

3. Call every idea, proposition, and argument to its proper class, and keep each part of the subject in its own place. Put those things all together that belong to one part or property, one consideration or view of your subject. This will prevent needless repetitions, and keep you from intermixing things which are different. We must maintain this distinction of things and places if we would be safe from error. It is confusion that leads us into endless mistakes, which naturally arise from a variety of ideas ill-joined, sorted, or ill-disposed. It is one great use of method, that a multitude of thoughts and propositions may be so distinctly ranged in their proper situations, that the mind may not be overwhelmed with a confused attention to them all at once, nor be distracted with their variety, nor be tempted to unite things which ought to be separated, nor to disjoin things which should be united.

4. In the partition of your discourse into distinct heads, take heed that your particulars do not interfere with the general, nor with each other. Think it is not enough that you make use of distinct expressions in each particular, but take care that the ideas be distinct also. It is mere foolery to multiply distinct particulars in treating of things, where the difference of your particulars lies only in names and words.

Rule IV. The method of treating a subject should be plenary or full, so that nothing may be wanting; nothing which is necessary or proper should be omitted.

When you are called to explain a subject, do not pass by, nor skip over any thing in it which is very difficult or obscure.

When you enumerate the parts or the properties of any subject, do it in a complete and comprehensive manner.

When you are asserting or proving any truth, see that every doubtful or disputable part of the argument be well supported and confirmed.

If you are to illustrate or argue a point of difficulty, be not too scanty of words, but rather become a little copious and diffusive in your language: Set the truth before the reader in several lights, turn the various sides of it to view, in order to give a full idea and firm evidence of the proposition.

*Things of one kind are called homogeneous, things of different kinds are called heterogeneous.

When you are drawing up a narrative of any matter of fact, see that no important circumstance be omitted.

When you propose the solution of any difficulty, consider all the various cases wherein it can happen, and shew how they may be solved.

In short, let your enumerations, your divisions and distributions of things be so accurate, that no needful part or idea may be left out.

This fulness of method does not require that every thing should be said which can be said upon any subject; for this would make each single science endless: But you should say every thing which is necessary to the design in view, and which has a proper and direct tendency to this end; always proportioning the amplitude of your matter, and the fulness of your discourse to your great design, to the length of your time, to the convenience, delight, and profit of your hearers.

Rule V. As your method must be full without deficiency, so it must be short, or without superfluity. The fulness of a discourse enlarges our knowledge, and the well-concerted brevity saves our time. In order to observe this rule, it will be enough to point out the chief of those superfluities or redundancies, which some persons are guilty of in their discourses, with a due caution against them.

1. Avoid all needless repetitions of the same thing in different parts of your discourse. It must be confessed there are several cases wherein a review of the same foregoing proposition is needful to explain or prove several of the following positions; but let your method be so contrived, as far as possible, that it may occasion the fewest rehearsals of the same thing; for it is not grateful to the hearers without evident necessity.

2. Have a care of tedious prolixity, or drawing out any part of your discourse to an unnecessary and tiresome length. It is much more honourable for an instructor, an orator, a pleader, or a preacher, that his hearers should say, I was afraid he would have done, than that they should be tempted to shew signs of uneasiness, and long for the conclusion.

Besides there is another inconvenience in it; when you affect to amplify on the former branches of a discourse, you will often lay a necessity upon yourself of contracting the latter and most useful parts of it, and perhaps prevent yourself in the most important part of your design. Many a preacher has been guilty of this fault in former days, nor is the present age without some instances of this weakness.

3. Do not multiply explications where there is no difficulty, or darkness, or danger of mistake. Be not fond of tracing every word of your theme through all the grammatical, the logical, and metaphysical characters and relations of it; nor shew your critical learning in spreading abroad the various senses of a word, and the various origin of those senses, the etymology of terms, the synonymous and the paronymous or kindred names, &c. where the chief point of discourse does not at all require it. You would laugh at a pedant, who professing to explain the Athanasian creed, should acquaint you, that Athanasius is derived from a Greek word, which signifies immortality, and that the same word ἀθανασία signifies also the herb tansy.

There are some persons so fond of their learned distinctions, that they will shew their subtlety by distinguishing where there is no difference; and the same silly affectation will introduce distinctions upon every occurrence, and bring three or four negatives upon every subject of discourse; first to declare what it is not, and then what it is;

whereas such negatives ought never to be mentioned where there is no apparent danger of mistake. How ridiculous would that writer be, who, if he were speaking of the Nicene creed, should declare negatively, 1. That he did not mean the doctrine which the inhabitants of Nice believed; nor 2. A creed written by them; but 3. Positively, a creed composed by several christian bishops met together in the city of Nice: The positive is sufficient here, and the two negatives are impertinent.

4. Be not fond of proving those things which need no proof; such as self-evident propositions and truths universally confessed, or such as are entirely agreed to and granted by our opponents. It is this vain affectation of proving every thing that has led geometricians to form useless and intricate demonstrations to support some theorems which are sufficiently evident to the eye by inspection, or to the mind by the first mention of them: And it is the same humour that reigns sometimes in the pulpit, and spends half the sermon in proving some general truth which is never disputed or doubted, and thereby robs the auditory of more useful entertainment.

5. As there are some things so evidently true, that they want no proof, so there are others so evidently false that they want no refutation. It is mere trifling, and a waste of our precious moments, to invent and raise such objections as no man would ever make in earnest, and that merely for the sake of answering and solving them: This breaks in notoriously upon the due brevity of method.

6. Avoid in general all learned forms, all trappings of art, and ceremonies of the schools, where there is no need of them. It is reported concerning the late czar of Muscovy, that when he first acquainted himself with mathematical learning, he practised all the rules of circumvallation and contravallation, at the siege of a town in Livonia; and by the length of those formalities he lost the opportunity of taking the town.

7. Do not suffer every occasional and incidental thought to carry you away into a long parenthesis, and thus to stretch out your discourse, and divert you from the point in hand. In the pursuit of your subject, if any useful thought occur which belongs to some other theme, note it down, for the sake of your memory, on some other paper, and lay it by in reserve for its proper place and season: But let it not incorporate itself with your present theme, nor draw off your mind from your main business, though it should be ever so inviting. A man who walks directly but slowly towards his journey's end, will arrive thither much sooner than his neighbour, who runs into every crooked turning which he meets, and wanders aside to gaze at every thing that strikes his eyes by the way, or to gather every gaudy flower that grows by the side of the road.

To sum up all: There is a happy medium to be observed in our method, so that the brevity may not render the sense obscure, nor the argument feeble, nor our knowledge merely superficial: And on the other hand, that the fulness and copiousness of our method may not waste the time, tire the learner, or fill the mind with trifles and impertinences.

The copious and the contracted way of writing have each their peculiar advantages. There is a proper use to be made of large paraphrases, and full, particular, and diffusive explications and arguments; these are fittest for those who design to be acquainted thoroughly with every part of the subject. There is also a use of shorter hints, abstracts, and compendiums, to instruct those who seek only a slight and general know-

ledge, as well as to refresh the memory of those who have learned the science already, and gone through a larger scheme. But it is a gross abuse of these various methods of instruction, when a person has read a mere compendium or epitome of any science, and he vainly imagines that he understands the whole science. So one boy may become a philosopher by reading over the mere dry definitions and divisions of Scheibler's *Compendium of Peripateticism:* So another may boast that he understands anatomy, because he has seen a skeleton; and a third profess himself a learned divine, when he can repeat the apostles' creed.

Rule VI. Take care that your method be proper to the subject in hand, proper to your present design, as well as proper to the age and place wherein you dwell.

1. Let your method be proper to the subject. All sciences must not be learned or taught in one method. Morality and theology, metaphysicks and logick, will not be easily and happily reduced to a strict mathematical method: Those who have tried, have found much inconvenience therein.

Some things have more need to be explained than to be proved, as axioms, or self-evident propositions; and indeed all the first great principles, the chief and most important doctrines both of natural and revealed religion; for when the sense of them is clearly explained, they appear so evident in the light of nature or scripture, that they want no other proof. There are other things that stand in need of proof, as well as explication, as many mathematical theorems, and several deep controversies in morality and divinity. There are yet other sorts of subjects which want rather to be warmly impressed upon the mind by fervent exhortations, and stand in more need of this than they do either of proof or explication; such are the most general, plain, and obvious duties of piety towards God, and love towards men, with the government of all our inclinations and passions. Now these several subjects ought to be treated in a different manner and method.

Again, there are some subjects in the same treatise which are more useful and necessary than others, and some parts of a subject which are eminently and chiefly designed by a writer or speaker: True method will teach us to dwell longer upon these themes, and to lay out more thought and language upon them; whereas the same art of method will teach us to cut short those things which are used only to introduce our main subject, and to stand as a scaffolding merely to aid the structure of our discourse. It will teach us also to content ourselves with brief hints of those matters which are merely occasional and incidental.

2. Your method must be adjusted by your design, for if you treat of the same subject with two different views and designs, you will find it necessary to use different methods. Suppose the doctrine of the sacred Trinity were your theme, and you were to read a lecture to young students on that subject, or if you designed a treatise for the conviction of learned men, you would pursue a very different method from that which would be proper to regulate a practical discourse, or a sermon to instruct common Christians merely in the pious improvement of this doctrine, and awaken them to the duties which are derived thence.

In short, we must not first lay down certain and precise rules of method, and resolve to confine the matter we discourse of to that particular form and order of topics; but we must well consider and study the subject of our discourse thoroughly, and take a just

survey of our present design, and these will give sufficient hints of the particular form and order in which we should handle it, provided that we are moderately skilled in the general laws of method and order.

Yet let it be noted here, that neither the subject nor matter of a discourse, nor the particular design of it, can so precisely determine the method, as to leave no room for liberty and variety. The very same theme may be handled, and that also with the same design, in several different methods, among which it is hard to say which is the best. In writing a system of divinity, some begin with the scriptures, and thence deduce all other doctrines and duties. Some begin with the Being of God and his attributes, so far as he is known by the light of nature, and then proceed to the doctrines of revelation. Some distinguish the whole subject into the *credenda* and *agenda*, that is, things to be believed, and things to be done. Some think it best to explain the whole Christian religion by an historical detail of all the discoveries which God has made of himself to this lower world, beginning at the creation in the first chapter of Genesis, and so proceeding onward according to the narrative of the Old and New Testament. And there are others that endeavour to include the whole of religion under these four heads, namely, The Apostles' Creed, the Lord's Prayer, the Ten Commandments, and the Two Sacraments; though I cannot but think this is the least accurate of any. The same variety may be allowed in treating other subjects; this very Treatise of Logick is an instance of it, whose method differs very considerably from any others which I have seen, as they differ also greatly from one another, though several of them are confessed to be well written.

3. Though a just view of our subject and our design may dictate proper rules of natural method, yet there must be some little deference at least paid to the custom of the age wherein we live, and to the humour and genius of our readers or hearers; which if we utterly reject and disdain, our performances will fail of the desired success, even though we may have followed the just rules of method. I will mention but this one instance: In the former century it was frequent with learned men to divide their theme or subject into a great multitude of co-ordinate members or parts, they abounded also in the forms of logick and distinction, and indulged numerous ranks of subordination. Now though we ought not to abandon the rules of just method and division, in order to comport with the modish writers in our age who have renounced them, yet it is prudent to pay so much respect to the custom of the age, as to use these forms of division with due moderation, and not affect to multiply them in such a manner as to give an early and needless disgust to the generality of our present readers. The same may be said concerning various other methods of conduct in the affairs of learning, as well as the affairs of life, wherein we must indulge a little to custom: And yet we must by no means suffer ourselves so far to be imposed upon and governed by it, as to neglect those rules of method which are necessary for the safe, easy, and complete enquiry into truth, or the ready and effectual communication of it to others.

Rule VII. The last requisite of method is, that the parts of a discourse should be well connected; and these three short directions will suffice for this purpose.

1. Keep your main end and design ever in view, and let all the parts of your discourse have a tendency towards it, and as far as possible make that tendency visible all

the way. Otherwise the readers or hearers will have reason to wonder for what end this or that particular was introduced.

2. Let the mutual relation and dependence of the several branches of your discourse be so just and evident, that every part may naturally lead onward to the next, without any huge chasms or breaks, which interrupt and deform the scheme. The connection of truths should arise and appear in their successive ranks and order, as the several parts of a fine prospect ascend just behind each other, in their natural and regular elevations and distances, and invite the eye to climb onward with constant pleasure till it reach the sky. Whatsoever horrid beauty a precipice or cataract may add to the prospect of a country, yet such sort of hideous and abrupt appearances in a scene of reasoning are real blemishes and not beauties. When the reader is passing over such a treatise, he often finds a wide vacancy, and makes an uneasy stop, and knows not how to transport his thoughts over to the next particular, for want of some clue or connecting idea to lay hold of.

3. Acquaint yourself with all the proper and decent forms of transition from one part of a discourse to another, and practise them as occasion offers. Where the ideas, propositions, and arguments, are happily disposed, and well connected, the truth indeed is secure; but it renders the discourse much more agreeable, when proper and graceful expression joins the parts of it together in so entertaining a manner, that the reader knows not how to leave off till he hath arrived at the end.

These are the general and most important rules of true method; and though they belong chiefly to the communication of knowledge, yet an early and thorough acquaintance with them will be of considerable use toward the pursuit and attainment of it.

Those persons who have never any occasion to communicate knowledge by writing, or by public discourses, may also with great advantage peruse these rules of method, that they may learn to judge with justice and accuracy concerning the performances of others. And besides, a good acquaintance with method will greatly assist every one in ranging, disposing, and managing all human affairs.

The particular means or method for a farther improvement of the understanding, are very various, such as meditation, reading, conversing, disputing by speech or by writing, question and answer, &c. And in each of these practices some special forms may be observed, and special rules may be given to facilitate and secure our inquiries after truth. But this would require a little volume by itself, and a treatise of logick has always been esteemed sufficiently complete without it.

THE

IMPROVEMENT OF THE MIND:

OR,

A SUPPLEMENT

TO

THE ART OF LOGICK:

CONTAINING

A VARIETY OF REMARKS AND RULES

FOR

THE ATTAINMENT AND COMMUNICATION OF USEFUL KNOWLEDGE, IN RELIGION, IN THE SCIENCES, AND IN COMMON LIFE.

THE

PREFACE.

IN the last page of the Treatise of Logick which I published many years ago, it is observed, that there are several other things which might assist the cultivation of the mind, and its improvement in knowledge, which are not usually represented among the principles or precepts of that art or science. These are the subjects which compose this book; these are the sentiments and rules, many of which I had then in view, and which I now venture into public light.

The present treatise, if it may assume the honour of that name, is made up of a variety of remarks and directions for the improvement of the mind in useful knowledge. It was collected from the observations which I had made on my own studies, and on the temper and sentiments, the humour and conduct, of other men in their pursuit of learning, or in the affairs of life; and it has been considerably assisted by occasional collections in the course of my reading, from many authors, and on different subjects. I confess, in far the greatest part, I stand bound to answer for the weaknesses or defects that will be found in these papers, not being able to point to other writers, whence the twentieth part of them is derived.

The work was composed at different times, and by slow degrees. Now and then, indeed, it spread itself into branches and leaves like a plant in April, and advanced seven or eight pages in a week; and sometimes it lay by without growth, like a vegetable in the winter, and did not increase half so much in the revolution of a year.

As these thoughts occurred to me in reading or meditation, or in my notices of the various appearances of things among mankind, they were thrown under those heads which make the present titles of the chapters, and were by degrees reduced to something like a method, such as the subject would admit.

On these accounts it is not to be expected that the same accurate order should be observed either in the whole book, or in the particular chapters thereof, which is necessary in the system of any science, whose scheme is projected at once. A book which has been twenty years in writing, may be indulged in some variety of style and manner, though I hope there will not be found any great difference of sentiment; for wherein I

had improved in later years beyond what I had first written, a few dashes and alterations have corrected the mistakes: And if the candour of the reader will but allow what is defective in one place, to be supplied by additions from another, I hope there will be found a sufficient reconciliation of what might seem at first to be scarcely consistent.

The language and dress of these sentiments is such as the present temper of mind dictated, whether it were grave or pleasant, severe or smiling. If there has been any thing expressed with too much severity, I suspect it will be found to fall upon those sneering or daring writers of the age against religion, and against the Christian scheme, who seemed to have left reason, or decency, or both, behind them in some of their writings.

The same apology of the length of years in composing this book, may serve also to excuse a repetition of the same sentiments which may happen to be found in different places without the author's design; but in other pages it was intended, so that those rules for the conduct of the understanding which are most necessary should be set in several lights, that they might with more frequency and more force impress the soul. I shall be sufficiently satisfied with the good-humour and lenity of my readers, if they will please to regard these papers as parcels of imperfect sketches, which were designed by a sudden pencil, and in a thousand leisure moments, to be one day collected into landscapes of some little prospects in the regions of learning, and in the world of common life, pointing out the fairest and most fruitful spots, as well as the rocks and wildernesses, and faithless morasses of the country. But I feel age advancing upon me, and my health is insufficient to perfect what I had designed, to increase and amplify these remarks, to confirm and improve these rules, and to illuminate the several pages with a richer and more beautiful variety of examples. The subject is almost endless, and new writers in the present and in following ages may still find sufficient follies, weaknesses, and dangers among mankind, to be represented in such a manner as to guard youth against them.

These hints, such as they are, I hope may be rendered some way useful to persons in younger years, who will favour them with a perusal, and who would seek the cultivation of their own understandings in the early days of life. Perhaps they may find something here which may awake a latent genius, and direct the studies of a willing mind. Perhaps it may point out to a student now and then, what may employ the most useful labours of his thoughts, and accelerate his diligence in the most momentous inquiries. Perhaps a sprightly youth may here meet with something to guard or warn him against mistakes, and withhold him at other times from those pursuits which are like to be fruitless and disappointing.

Let it be observed also, that in our age several of the ladies pursue science with success; and others of them are desirous of improving their reason even in common affairs of life, as well as the men: Yet the characters which are here drawn occasionally, are almost universally applied to one sex; but if any of the other should find a character which suits them, they may, by a small change of the termination, apply and assume it to themselves, and accept the instruction, the admonition, or the applause which is designed in it.

There is yet another thing which it is necessary my reader should be informed of; but whether he will call it fortunate or unhappy, I know not. It is sufficiently evident that the book consists of two parts: The first lays down remarks and rules how we may attain useful knowledge ourselves; and the second, how we may best communicate it to others. These were both designed to be printed in this volume: But a manuscript which hath been near twenty years in hand, may be easily supposed to allow of such difference in the hand-writing, so many lines altered, so many things interlined, and so many paragraphs and pages here and there inserted, that it was not easy to compute the number of sheets that it would make in print: And it now appears, that the remarks and rules about the communication of knowledge being excluded here, they must be left to another volume; wherein will be contained various observations relating to methods of instruction, the style and manner of it, the way of convincing other persons, of guarding youth against prejudices, of treating and managing the prejudices of men, of the use and abuse of authority, of education, and of the various things in which children and youth should be instructed, of their proper business and diversions, and of the degrees of liberty and restraint therein, &c. Of all which I had once designed a more complete treatise; but my years advancing, I now despair to finish it.

The essays or chapters on these subjects being already written, if I am favoured with a tolerable degree of health, will be put to the press, when the favourable acceptance of this first part shall give sufficient encouragement to proceed.

THE

IMPROVEMENT OF THE MIND.

THE FIRST PART.

DIRECTIONS FOR THE ATTAINMENT OF USEFUL KNOWLEDGE.

INTRODUCTION.

NO man is obliged to learn and know every thing; this can neither be sought nor required, for it is utterly impossible: Yet all persons are under some obligation to improve their own understanding, otherwise it will be a barren desert, or a forest overgrown with weeds and brambles. Universal ignorance or infinite errors will overspread the mind, which is utterly neglected and lies without any cultivation. Skill in the sciences is indeed the business and profession but of a small part of mankind; but there are many others placed in such an exalted rank in the world, as allows them much leisure and large opportunities to cultivate their reason, and to beautify and enrich their mind with various knowledge. Even the lower orders of men have particular callings in life, wherein they ought to acquire a just degree of skill, and this is not to be done well without thinking and reasoning about them.

The common duties and benefits of society, which belong to every man living, as we are social creatures, and even our native and necessary relations to a family, a neighbourhood, or a government, oblige all persons whatsoever to use their reasoning powers upon a thousand occasions; every hour of life calls for some regular exercise of our judgment as to times and things, persons and actions; without a prudent and discreet determination in matters before us, we shall be plunged into perpetual errors in our conduct. Now that which should always be practised, must at some time be learned.

Besides, every son and daughter of Adam has a most important concern in the affairs of a life to come, and therefore it is a matter of the highest moment for every one to understand, to judge, and to reason right about the things of religion. It is in vain for any to say, we have no leisure or time for it. The daily intervals of time, and vacancies from necessary labour, together with the one day in seven in the Christian

world, allows sufficient time for this, if men would but apply themselves to it with half so much zeal and diligence, as they do to the trifles and amusements of this life; and it would turn to infinitely better account.

Thus it appears to be the necessary duty and the interest of every person living to improve his understanding, to inform his judgment, to treasure up useful knowledge, and to acquire the skill of good reasoning, as far as his station, capacity, and circumstances furnish him with proper means for it. Our mistakes in judgment may plunge us into much folly and guilt in practice. By acting without thought or reason, we dishonour the God that made us reasonable creatures, we often become injurious to our neighbours, kindred, or friends, and we bring sin and misery upon ourselves: For we are accountable to God our judge for every part of our irregular and mistaken conduct, where he hath given us sufficient advantages to guard against those mistakes.

It is the design of logick to give this improvement to the mind, and to teach us the right use of reason in the acquirement and communication of all useful knowledge; though the greatest part of writers on that subject have turned it into a composition of hard words, trifles, and subtleties, for the mere use of the schools, and that only to amuse the minds and the ears of men with empty sounds, which flatter their vanity and puff up their pride with a pompous and glittering show of false learning; and thus they have perverted the great and valuable design of that science.

A few modern writers have endeavoured to recover the honour of logick, since that excellent author of the *Art of Thinking* led the way: Among the rest, I have presumed to make an attempt of the same kind, in a treatise published several years ago, wherein it was my constant aim to assist the reasoning powers of every rank and order of men, as well as to keep an eye to the best interests of the schools and the candidates of true learning. There I have endeavoured to shew the mistakes we are exposed to in our conception, judgment, and reasoning; and pointed to the various springs of them. I have also laid down many general and particular rules how to escape error, and attain truth in matters of the civil and religious life, as well as in the sciences. But there are several other observations very pertinent to this purpose, which have not fallen so directly under any of those heads of discourse, or at least they would have swelled that treatise to an improper size; and therefore I have made a distinct collection of them here out of various authors, as well as from my own observation, and set them down under the following heads.

The learned world who has done so much unmerited honour to that logical treatise, as to receive it into our flourishing universities, may possibly admit this as a second part or supplement to that treatise. And I may venture to persuade myself, that if the common and the busy ranks of mankind, as well as the scholar and the gentleman, would but transcribe such rules into their understanding, and practise them upon all occasions, there would be much more truth and knowledge found among men: And it is reasonable to hope that justice, virtue, and goodness would attend as the happy consequents.

CHAPTER I.

GENERAL RULES FOR THE IMPROVEMENT OF KNOWLEDGE.*

RULE I.

DEEPLY possess your mind with the vast importance of a good judgment, and the rich and inestimable advantage of right reasoning. Review the instances of your own misconduct in life; think seriously with yourselves how many follies and sorrows you had escaped, and how much guilt and misery you had prevented, if from your early years you had but taken due pains to judge aright concerning persons, times, and things. This will awaken you with lively vigour to address yourselves to the work of improving your reasoning powers, and seizing every opportunity and advantage for that end.

Rule II. Consider the weaknesses, frailties, and mistakes of human nature in general, which arise from the very constitution of a soul united to an animal body, and subjected to many inconveniencies thereby. Consider the many additional weaknesses, mistakes, and frailties which are derived from our original apostacy and fall from a state of innocence; how much our powers of understanding are yet more darkened, enfeebled, and imposed upon by our senses, our fancies, and our unruly passions, &c. Consider the depth and difficulty of many truths, and the flattering appearances of falsehood, whence arises an infinite variety of dangers to which we are exposed in our judgment of things. Read with greediness those authors that treat of the doctrine of prejudices, prepossessions, and springs of error, on purpose to make your soul watchful on all sides, that it suffer not itself, as far as possible, to be imposed upon by any of them. See more on this subject, Logick, Part II. Chap. 3. and Part III. Chap. 3.

Rule III. A slight view of things so momentous is not sufficient. You should therefore contrive and practise some proper methods to acquaint yourself with your own ignorance, and to impress your mind with a deep and painful sense of the low and imperfect degrees of your present knowledge, that you may be incited with labour and activity to pursue after greater measures. Among others, you may find some such methods as these successful.

1. Take a wide survey now and then of the vast and unlimited regions of learning. Let your meditations run over the names of all the sciences, with their numerous branchings, and innumerable particular themes of knowledge; and then reflect how few of them you are acquainted with in any tolerable degree. The most learned of mortals will never find occasion to act over again what is fabled of Alexander the Great, that when he had conquered what was called the Eastern World, he wept for want of more worlds to conquer. The worlds of science are immense and endless.

* Though the most of these following rules are chiefly addressed to those whom their fortune or their station require to addict themselves to the peculiar improvement of their minds in greater degrees of knowledge, yet every one who has leisure and opportunity to be acquainted with such writings as these, may find something among them for their own use.

2. Think what a numberless variety of questions and difficulties there are belonging even to that particular science in which you have made the greatest progress, and how few of them there are in which you have arrived at a final and undoubted certainty; excepting only those questions in the pure and simple mathematics, whose theorems are demonstrable and leave scarcely any doubt; and yet even in the pursuit of some few of these, mankind have been strangely bewildered.

3. Spend a few thoughts sometimes on the puzzling enquiries concerning vacuums and atoms, the doctrine of infinites, indivisibles, and incommensurables, in geometry, wherein there appear some insolvable difficulties: Do this on purpose to give you a more sensible impression of the poverty of your understanding, and the imperfection of your knowledge. This will teach you what a vain thing it is to fancy that you know all things; and will instruct you to think modestly of your present attainments, when every dust of the earth and every inch of empty space surmounts your understanding and triumphs over your presumption. *Arithmo* had been bred up to accounts all his life, and thought himself a complete master of numbers: But when he was pushed hard to give the square root of the number 2, he tried at it, and laboured long in millesimal fractions, until he confessed there was no end of the inquiry; and yet he learned so much modesty by this perplexing question, that he was afraid to say, it was an impossible thing. It is some good degree of improvement when we are afraid to be positive.

4. Read the accounts of those vast treasures of knowledge which some of the dead have possessed, and some of the living do possess. Read and be astonished at the almost incredible advances which have been made in science. Acquaint yourselves with some persons of great learning, that by converse among them, and comparing yourselves with them, you may acquire a mean opinion of your own attainments, and may be thereby animated with new zeal to equal them as far as possible, or to exceed: Thus let your diligence be quickened by a generous and laudable emulation. If *Vanillus* had never met with *Scitorio* and *Polydes*, he had never imagined himself a mere novice in philosophy, nor ever set himself to study in good earnest.

Remember this, that if upon some few superficial acquirements you value, exalt, and swell yourself as though you were a man of learning already, you are thereby building a most unpassable barrier against all improvement; you will lie down and indulge idleness, and rest yourself contented in the midst of deep and shameful ignorance. *Multi ad scientiam pervenissent si se illuc pervenisse non putassent.*

Rule IV. Presume not too much upon a bright genius, a ready wit, and good parts, for this without labour and study will never make a man of knowledge and wisdom. This has been an unhappy temptation to persons of a vigorous and gay fancy, to despise learning and study. They have been acknowledged to shine in an assembly, and sparkle in discourse upon common topics, and thence they took it into their heads to abandon reading and labour, and grew old in ignorance; but when they had lost the vivacities of animal nature and youth, they became stupid and sottish even to contempt and ridicule. *Lucidas* and *Scintillo* are young men of this stamp; they shine in conversation, they spread their native riches before the ignorant; they pride themselves in their own lively images of fancy, and imagine themselves wise and learned; but they had best avoid the presence of the skilful and the test of reasoning; and I would advise them once a day to think forward a little, what a contemptible figure they will make in age.

The witty men sometimes have sense enough to know their own foible, and therefore they craftily shun the attacks of argument, or boldly pretend to despise and renounce them; because they are conscious of their own ignorance, and inwardly confess their want of acquaintance with the skill of reasoning.

Rule V. As you are not to fancy yourself a learned man because you are blessed with a ready wit, so neither must you imagine that large and laborious reading, and a strong memory, can denominate you truly wise.

What that excellent critic has determined when he decided the question, whether wit or study makes the best poet, may well be applied to every sort of learning——

——— *Ego nec studium sine divite venâ,*
Nec rude quid prosit video ingenium: Alterius sic
Altera poscit opem res, et conjurat amicè.

HOR. DE ART. POET.

THUS MADE ENGLISH:

Concerning poets there has been contest,
Whether they're made by art or nature best:
But if I may presume in this affair,
Among the rest my judgment to declare,
No art without a genius will avail,
And parts without the help of art will fail:
But both ingredients jointly must unite,
Or verse will never shine with a transcendent light.

OLDHAM.

It is meditation and studious thought, it is the exercise of your own reason and judgment upon all you read, that gives good sense even to the best genius, and affords your understanding the truest improvement. A boy of strong memory may repeat a whole book of Euclid, yet be no geometrician; for he may not be able perhaps to demonstrate one single theorem. *Memorino* has learned half the Bible by heart, and is become a living concordance and a speaking index to theological folios, and yet he understands little of divinity.

A well-furnished library and a capacious memory are indeed of singular use toward the improvement of the mind; but if all your learning be nothing else but a mere amassment of what others have written, without a due penetration into their meaning, and without a judicious choice and determination of your own sentiments, I do not see what title your head has to true learning above your shelves. Though you have read philosophy and theology, morals and metaphysics in abundance, and every other art and science, yet if your memory is the only faculty employed, with the neglect of your reasoning powers, you can justly claim no higher character but that of a good historian of the sciences.

Here note, Many of the foregoing advices are more peculiarly proper for those who are conceited of their abilities, and are ready to entertain a high opinion of themselves. But a modest humble youth, of a good genius, should not suffer himself to be discouraged by any of these considerations. They are designed only as a spur to diligence, and a guard against vanity and pride.

Rule VI. Be not so weak as to imagine that a life of learning is a life of laziness and ease: Dare not give up yourself to any of the learned professions unless you are

resolved to labour hard at study, and can make it your delight and the joy of your life, according to the motto of our late Lord Chancellor King:

Labor ipse voluptas.

It is no idle thing to be a scholar indeed. A man much addicted to luxury and pleasure, recreation and pastime, should never pretend to devote himself entirely to the sciences, unless his soul be so reformed and refined, that he can taste all these entertainments eminently in his closet, among his books and papers. *Sobrino* is a temperate man and a philosopher, and he feeds upon partridge and pheasant, venison and ragouts, and every delicacy, in a growing understanding and a serene and healthy soul, though he dines on a dish of sprouts or turnips. *Languinos* loved his ease, and therefore chose to be brought up a scholar: He had much indolence in his temper, and as he never cared for study, he falls under universal contempt in his profession, because he has nothing but the gown and the name.

Rule VII. Let the hope of new discoveries, as well as the satisfaction and pleasure of known truths, animate your daily industry. Do not think learning in general is arrived at its perfection, or that the knowledge of any particular subject in any science cannot be improved, merely because it has lain five hundred or a thousand years without improvement. The present age, by the blessing of God on the ingenuity and diligence of men, has brought to light such truths in natural philosophy, and such discoveries in the heavens and the earth, as seemed to be beyond the reach of man. But may there not be Sir Isaac Newtons in every science? You should never despair therefore of finding out that which has never yet been found, unless you see something in the nature of it which renders it unsearchable and above the reach of our faculties.

Nor should a student in divinity imagine that our age is arrived at a full understanding of every thing which can be known by the scriptures. Every age since the Reformation hath thrown some further light on difficult texts and paragraphs of the Bible, which have been long obscured by the early rise of antichrist: And since there are at present many difficulties and darknesses hanging about certain truths of the Christian religion, and since several of these relate to important doctrines, such as the origin of sin, the fall of Adam, the person of Christ, the blessed Trinity, and the decrees of God, &c. which do still embarrass the minds of honest and enquiring readers, and which make work for noisy controversy; it is certain there are several things in the Bible yet unknown and not sufficiently explained, and it is certain that there is some way to solve these difficulties, and to reconcile these seeming contradictions. And why may not a sincere searcher of truth in the present age, by labour, diligence, study, and prayer, with the best use of his reasoning powers, find out the proper solution of those knots and perplexities which have hitherto been unsolved, and which have afforded matter for angry quarrelling? Happy is every man who shall be favoured of heaven to give a helping hand towards the introduction of the blessed age of light and love.

Rule VIII. Do not hover always on the surface of things, nor take up suddenly with mere appearances; but penetrate into the depth of matters, as far as your time and circumstances allow, especially in those things which relate to your own profession. Do not indulge yourselves to judge of things by the first glimpse, or a short and super-

ficial view of them: For this will fill the mind with errors and prejudices, and give it a wrong turn and ill habit of thinking, and make much work for retraction. *Subito* is carried away with title-pages, so that he ventures to pronounce upon a large octavo at once, and to recommend it wonderfully when he had read half the preface. Another volume of controversies, of equal size, was discarded by him at once, because it pretended to treat of the Trinity, and yet he could neither find the word essence nor subsistences in the twelve first pages: But *Subito* changes his opinions of men and books and things so often, that nobody regards him.

As for those sciences, or those parts of knowledge, which either your profession, your leisure, your inclination, or your incapacity, forbid you to pursue with much application, or to search far into them, you must be contented with an historical and superficial knowledge of them, and not pretend to form many judgments of your own on those subjects which you understand very imperfectly.

Rule IX. Once a day, especially in the early years of life and study, call yourselves to an account what new ideas, what new proposition or truth you have gained, what further confirmation of known truths, and what advances you have made in any part of knowledge; and let no day, if possible, pass away without some intellectual gain: Such a course, well pursued, must certainly advance us in useful knowledge. It is a wise proverb among the learned, borrowed from the lips and practice of a celebrated painter, *Nulla dies sine lineâ;* let no day pass without one line at least; and it was a sacred rule among the Pythagoreans, that they should every evening thrice run over the actions and affairs of the day, and examine what their conduct had been, what they had done, or what they had neglected; and they assured their pupils, that by this method they would make a noble progress in the path of virtue.

Μήδ' ὕπνον μαλακοῖσιν ἐπ' ὄμμασι προσδέξασθαι
Πρὶν τῶν ἡμερινῶν ἔργων τρὶς ἕκαστον ἐπελθεῖν.
Πῇ παρέβην; τί δ' ἔρεξα; τί μοι δέον οὐκ' ἐτελέσθη;
Ταῦτα σε τῆς θείης ἀρετῆς εἰς ἴχνια θήσει.

Nor let soft slumber close your eyes
Before you've recollected thrice
The train of actions thro' the day:
Where have my feet chose out the way?
What have I learn'd, where'er I've been,
From all I've heard, from all I've seen?
What know I more that's worth the knowing?
What have I done that's worth the doing?
What have I sought that I should shun?
What duty have I left undone,
Or into what new follies run?
These self-enquiries are the road
That leads to virtue and to God.

I would be glad among a nation of Christians, to find young men heartily engaged in the practice of what this heathen writer teaches.

Rule X. Maintain a constant watch at all times against a dogmatical spirit: Fix not your assent to any proposition in a firm and unalterable manner, till you have some firm and unalterable ground for it, and till you have arrived at some clear and sure evidence; till you have turned the proposition on all sides, and searched the matter through and through, so that you cannot be mistaken. And even where you may think you have

full grounds of assurance, be not too early, nor too frequent in expressing this assurance in too peremptory and positive a manner, remembering that human nature is always liable to mistake in this corrupt and feeble state. A dogmatical spirit has many inconveniencies attending it; as,

1. It stops the ear against all further reasoning upon that subject, and shuts up the mind from all farther improvements of knowledge. If you have resolutely fixed your opinion, though it be upon too slight and insufficient grounds, yet you will stand determined to renounce the strongest reason brought for the contrary opinion, and grow obstinate against the force of the clearest argument. *Positivo* is a man of this character, and has often pronounced his assurance of the Cartesian vortexes: Last year some further light broke in upon his understanding, with uncontrollable force, by reading something of mathematical philosophy; yet having asserted his former opinions in a most confident manner, he is tempted now to wink a little against the truth, or to prevaricate in his discourse upon that subject, lest, by admitting conviction, he should expose himself to the necessity of confessing his former folly and mistake, and he has not humility enough for that.

2. A dogmatical spirit naturally leads us to arrogance of mind, and gives a man some airs in conversation, which are too haughty and assuming. *Audens* is a man of learning, and very good company, but his infallible assurance renders his carriage sometimes insupportable.

3. A dogmatical spirit inclines a man to be censorious of his neighbours. Every one of his opinions appears to him written as it were with sun-beams, and he grows angry that his neighbour does not see it in the same light. He is tempted to disdain his correspondents as men of low and dark understanding, because they will not believe what he does. *Furio* goes farther in this wild track, and charges those who refuse his notions with wilful obstinacy and vile hypocrisy; he tells them boldly, that they resist the truth, and sin against their consciences.

These are the men, that when they deal in controversy, delight in reproaches. They abound in tossing about absurdity and stupidity among their brethren: They cast the imputation of heresy and nonsense plentifully upon their antagonists; and in matters of sacred importance, they deal out their anathemas in abundance upon Christians better than themselves: They denounce damnation upon their neighbours without either justice or mercy, and when they pronounce sentences of divine wrath against supposed heretics, they add their own human fire and indignation. A dogmatist in religion is not a great way off from a bigot, and is in high danger of growing up to be a bloody persecutor.

Though caution and slow assent will guard you against frequent mistakes and retractions, yet you should get humility and courage enough to retract any mistake, and confess an error: Frequent changes are tokens of levity, in our first determinations; yet you should never be too proud to change your opinion, nor frighted at the name of changeling. Learn to scorn those vulgar bugbears which confirm foolish man in his own mistakes, for fear of being charged with inconstancy. I confess it is better not to judge, than to judge falsely; and it is wiser to withhold our assent till we see complete evidence; but if we have too suddenly given up our assent, as the wisest man does sometimes, if we have professed what we find afterwards to be false, we should never be ashamed nor afraid to renounce a mistake. That is a noble essay that is found

among the *Occasional Papers*, to encourage the world to practise retractations; and I would recommend it to the perusal of every scholar and every Christian.

Rule XII. He that would raise his judgment above the vulgar rank of mankind, and learn to pass a just sentence on persons and things, must take heed of a fanciful temper of mind, and a humourous conduct in his affairs. Fancy and humour early and constantly indulged, may expect an old age over-run with follies.

The notion of humourist is, one that is greatly pleased or greatly displeased with little things, who sets his heart much upon matters of very small importance, who has his will determined every day by trifles, his actions seldom directed by the reason and nature of things, and his passions frequently raised by things of little moment. Where this practice is allowed, it will insensibly warp the judgment to pronounce little things great, and tempt you to lay a great weight upon them. In short this temper will incline you to pass an unjust value on almost every thing that occurs; and every step that you take in this path is just so far out of the way to wisdom.

Rule XIII. For the same reason have a care of trifling with things important and momentous, or of sporting with things awful and sacred: Do not indulge a spirit of ridicule, as some witty men do on all occasions and subjects. This will as unhappily bias the judgment on the other side, and incline you to pass a low esteem on the most valuable objects. Whatsoever evil habit we indulge in practice, it will insensibly obtain a power over our understanding, and betray us into many errors. *Jocander* is ready with his jest to answer every thing that he hears; he reads books in the same jovial humour, and has got the art of turning every thought and sentence into merriment. How many awkward and irregular judgments does this man pass upon solemn subjects, even when he designs to be grave and in earnest? His mirth and laughing humour is formed into habit and temper, and leads his understanding shamefully astray. You will see him wandering in pursuit of a gay flying feather, and he is drawn by a sort of *ignis fatuus* into bogs and mire almost every day of his life.

Rule XIV. Ever maintain a virtuous and pious frame of spirit; for an indulgence of vicious inclinations debases the understanding and perverts the judgment. Whoredom and wine, and new wine, take away the heart and soul and reason of a man. Sensuality ruins the better faculties of the mind: An indulgence to appetite and passion enfeebles the powers of reason, it makes the judgment weak and susceptive of every falsehood, and especially of such mistakes as have a tendency towards the gratification of the animal; and it warps the soul aside strangely from that stedfast honesty and integrity that necessarily belongs to the pursuit of truth. It is the virtuous man who is in a fair way to wisdom. "God gives to those that are good in his sight, wisdom, and knowledge, and joy;" *Eccl.* ii. 26.

Piety towards God, as well as sobriety and virtue, are necessary qualifications to make a truly wise and judicious man. He that abandons religion must act in such a contradiction to his own conscience and best judgment, that he abuses and spoils the faculty itself. It is thus in the nature of things, and it is thus by the righteous judgment of God: Even the pretended sages among the heathens, who did not like to retain God in their knowledge, they were given up to a reprobate mind, εἰς νὸν ἀδόκιμον, an undistinguishing or injudicious mind, so that they judged inconsistently, and practised mere absurdities, τὰ μὴ ἀνήκοντα, *Rom.* i. 28.

And it is the character of the slaves of antichrist, 2 *Thess.* ii. 10, &c. that those "who receive not the love of the truth were exposed to the power of diabolical sleights and lying wonders." When divine revelation shines and blazes in the face of men with glorious evidence, and they wink their eyes against it, the god of this world is suffered to blind them even in the most obvious, common, and sensible things. The great God of heaven for this cause sends them strong delusions, that they should believe a lie; and the nonsense of transubstantiation, in the popish world, is a most glaring accomplishment of this prophecy, beyond ever what could have been thought of or expected among creatures who pretend to reason.

Rule XV. Watch against the pride of your own reason, and a vain conceit of your own intellectual powers, with the neglect of divine aid and blessing. Presume not upon great attainments in knowledge by your own self-sufficiency: Those who trust to their own understandings entirely, are pronounced fools in the word of God; and it is the wisest of men gives them this character, *he that trusteth in his own heart is a fool,* Prov. xxviii. 26. And the same divine writer advises us "to trust in the Lord with all our heart, and not to lean to our own understandings, nor to be wise in our own eyes," *Chap.* iii. 5, 7.

Those who, with a neglect of religion and dependence on God, apply themselves to search out every article in the things of God by the mere dint of their own reason, have been suffered to run into wild excesses of foolery, and strange extravagance of opinions. Every one who pursues this vain course, and will not ask for the conduct of God in the study of religion, has just reason to fear he shall be left of God, and given up a prey to a thousand prejudices: That he shall be consigned over to the follies of his own heart, and pursue his own temporal and eternal ruin. And even in common studies, we should by humility and dependence engage the God of truth on our side.

Rule XVI. Offer up therefore your daily requests to God the Father of lights, that he would bless all your attempts and labours in reading, study, and conversation. Think with yourself, how easily and how insensibly by one turn of thought he can lead you into a large scene of useful ideas: He can teach you to lay hold on a clue which may guide your thoughts with safety and ease through all the difficulties of an intricate subject. Think how easily the Author of your beings can direct your motions by his providence, so that the glance of an eye, or a word striking the ear, or a sudden turn of the fancy, shall conduct you to a train of happy sentiments. By his secret and supreme method of government he can draw you to read such a treatise, or to converse with such a person, who may give you more light into some deep subject in an hour, than you could obtain by a month of your own solitary labour.

Think with yourself, with how much ease the God of spirits can cast into your mind some useful suggestion, and give a happy turn to your own thoughts, or the thoughts of those with whom you converse, whence you may derive unspeakable light and satisfaction in a matter that has long puzzled and entangled you: He can shew you a path which the vulture's eye has not seen, and lead you by some unknown gate or portal, out of a wilderness and labyrinth of difficulties wherein you have been long wandering.

Implore constantly his divine grace to point your inclination to proper studies, and to fix your heart there. He can keep off temptations on the right hand and on the left, both by the course of his providence and by the secret and insensible intimations

of his Spirit. He can guard your understanding from every evil influence of error, and secure you from the danger of evil books and men, which might otherwise have a fatal effect, and lead you into pernicious mistakes.

Nor let this sort of advice fall under the censure of the godless and profane, as a mere piece of bigotry or enthusiasm derived from faith and the Bible: For the reasons which I have given to support this pious practice of invoking the blessing of God on our studies, are derived from the light of nature as well as revelation. He that made our souls and is the Father of spirits, shall he not be supposed to have a most friendly influence towards the instruction and government of them? The Author of our rational powers can involve them in darkness when he pleases by a sudden distemper, or he can abandon them to wander into dark and foolish opinions when they are filled with a vain conceit of their own light. He expects to be acknowledged in the common affairs of life, and he does as certainly expect it in the superior operations of the mind, and in the search of knowledge and truth. The very Greek heathens, by the light of reason, were taught to say, Ἐκ Διὸς ἀρχόμεθα, and the Latins, *A Jove principium, musæ.* In the works of learning they thought it necessary to begin with God. Even the poets call upon the muse as a goddess to assist them in their compositions.

The first lines of Homer in his Iliad and his Odyssey, the first line of Musæus in his song of Hero and Leander, the beginning of Hesiod in his poem of Works and Days, and several others, furnish us with sufficient examples of this kind; nor does Ovid leave out this piece of devotion as he begins his stories of the Metamorphoses. Christianity so much the more obliges us by the precepts of scripture to invoke the assistance of the true God in all our labours of the mind, for the improvement of ourselves and others. Bishop Saunderson says, that study without prayer is atheism, as well as that prayer without study is presumption. And we are still more abundantly encouraged by the testimony of those who have acknowledged from their own experience, that sincere prayer was no hindrance to their studies: They have gotten more knowledge sometimes upon their knees, than by their labour in perusing a variety of authors; and they have left this observation for such as follow, *Bene orâsse est bene studuisse.* Praying is the best studying.

To conclude, let industry and devotion join together, and you need not doubt the happy success. *Prov.* ii. 2. "Incline thine ear to wisdom, apply thine heart to understanding: Cry after knowledge, and lift up thy voice; seek her as silver, and search for her as for hidden treasures; then shalt thou understand the fear of the Lord, &c. which is the beginning of wisdom. It is the Lord who gives wisdom even to the simple, and out of his mouth cometh knowledge and understanding."

CHAPTER II.

OBSERVATION, READING, INSTRUCTION BY LECTURES, CONVERSATION, AND STUDY COMPARED.

THERE are five eminent means or methods whereby the mind is improved in the knowledge of things, and these are observation, reading, instruction by lectures, conversation, and meditation; which last in a most peculiar manner is called study.

Let us survey the general definitions or descriptions of them all.

I. Observation is the notice that we take of all occurrences in human life, whether they are sensible or intellectual, whether relating to persons or things, to ourselves or others. It is this that furnishes us, even from our infancy, with a rich variety of ideas and propositions, words and phrases: It is by this we know that fire will burn, that the sun gives light, that a horse eats grass, that an acorn produces an oak, that man is a being capable of reasoning and discourse, that our judgment is weak, that our mistakes are many, that our sorrows are great, that our bodies die and are carried to the grave, and that one generation succeeds another. All those things which we see, which we hear or feel, which we perceive by sense or consciousness, or which we know in a direct manner, with scarcely any exercise of our reflecting faculties or our reasoning powers, may be included under the general name of observation.

When this observation relates to any thing that immediately concerns ourselves, and of which we are conscious, it may be called experience. So I am said to know or experience that I have in myself a power of thinking, fearing, loving, &c. that I have appetites and passions working in me, and many personal occurrences have attended me in this life.

Observation therefore includes all that Mr. Locke means by sensation and reflection.

When we are searching out the nature or properties of any being, by various methods of trial; or when we apply some active powers, or set some causes at work, to observe what effects they would produce, this sort of observation is called experiment. So when I throw a bullet into water, I find it sinks: And when I throw the same bullet into quicksilver, I see it swims: But if I beat out this bullet into a thin hollow shape like a dish, then it will swim in the water too. So when I strike two flints together, I find they produce fire: When I throw a seed into the earth, it grows up into a plant.

All these belong to the first method of knowledge, which I call observation.

II. Reading is that means or method of knowledge, whereby we acquaint ourselves with what other men have written, or published to the world in their writings. These arts of reading and writing are of infinite advantage; for by them we are made partakers of the sentiments, observations, reasonings, and improvements of all the learned world, in the most remote nations, and in former ages, almost from the beginning of mankind.

III. Public or private lectures are such verbal instructions as are given by a

teacher while the learners attend in silence. This is the way of learning religion from the pulpit, or of philosophy or theology from the professor's chair, or of mathematics by a teacher shewing us various theorems or problems, that is, speculations or practices, by demonstration and operation, with all the instruments of art necessary to those operations.

IV. Conversation is another method of improving our minds, wherein by mutual discourse and enquiry, we learn the sentiments of others, as well as communicate our sentiments to others in the same manner. Sometimes indeed, though both parties speak by turns, yet the advantage is only on one side; as, when a teacher and a learner meet and discourse together: But frequently the profit is mutual. Under this head of conversation we may also rank disputes of various kinds.

V. Meditation or study includes all those exercises of the mind whereby we render all the former methods useful for our increase in true knowledge and wisdom. It is by meditation we come to confirm our memory of things that pass through our thoughts in the occurrences of life, in our own experiences, and in the observations we make: It is by meditation that we draw various inferences and establish in our minds general principles of knowledge. It is by meditation that we compare the various ideas which we derive from our senses, or from the operations of our souls, and join them in propositions. It is by meditation that we fix in our memory whatsoever we learn, and form our own judgment of the truth or falsehood, the strength or weakness of what others speak or write. It is meditation or study that draws out long chains of argument, and searches and finds deep and difficult truths, which before lay concealed in darkness.

It would be a needless thing to prove that our own solitary meditations, together with the few observations that the most part of mankind are capable of making, are not sufficient of themselves to lead us into the attainment of any considerable proportion of knowledge, at least in an age so much improved as ours is, without the assistance of conversation and reading, and other proper instructions that are to be attained in our days. Yet each of these five methods have their peculiar advantages, whereby they assist each other; and their peculiar defects, which have need to be supplied by the other's assistance. Let us trace over some of the particular advantages of each.

I. One method of improving the mind is observation, and the advantages of it are these:

1. It is owing to observation that our mind is furnished with the first simple and complex ideas. It is this lays the ground-work and foundation of all knowledge, and makes us capable of using any of the other methods for improving the mind: For if we did not attain a variety of sensible and intellectual ideas by the sensation of outward objects, by the consciousness of our own appetites and passions, pleasures and pains, and by inward experience of the actings of our own spirits, it would be impossible either for men or books to teach us any thing. It is observation that must give us our first ideas of things, as it includes in it sense and consciousness.

2. All our knowledge derived from observation, whether it be of single ideas or of propositions, is knowledge gotten at first hand. Hereby we see and know things as they are, or as they appear to us; we take the impressions of them on our minds from the original objects themselves, which give a clearer and stronger conception of things; these ideas are more lively, and the propositions, at least in many cases, are much more evident. Whereas what knowledge we derive from lectures, reading, and conversation,

is but the copy of other men's ideas, that is, the picture of a picture; and is one remove further from the original.

3. Another advantage of observation is, that we may gain knowledge all the day long, and every moment of our lives, and every moment of our existence we may be adding something to our intellectual treasures thereby, except only while we are asleep; and even then the remembrance of our dreamings will teach us some truths, and lay a foundation for a better acquaintance with human nature, both in the powers and in the frailties of it.

II. The next way of improving the mind is by reading, and the advantages of it are such as these:

1. By reading we acquaint ourselves in a very extensive manner with the affairs, factions, and thoughts of the living and the dead, in the most remote nations and in most distant ages; and that with as much ease as though they lived in our own age and nation. By reading of books we may learn something from all parts of mankind; whereas by observation we learn all from ourselves, and only what comes within our own direct cognizance; by conversation we can only enjoy the assistance of a very few persons, *viz.* those who are near us, and live at the same time when we do, that is, our neighbours and contemporaries: But our knowledge is much more narrowed still, if we confine ourselves merely to our own solitary reasonings, without much observation or reading: For then all our improvement must arise only from our own inward powers and meditations.

2. By reading we learn not only the actions and the sentiments of distant nations and ages, but we transfer to ourselves the knowledge and improvements of the most learned men, the wisest and the best of mankind, when or wheresoever they lived: For though many books have been written by weak and injudicious persons, yet the most of those books which have obtained great reputation in the world, are the products of great and wise men in their several ages and nations: Whereas we can obtain the conversation and instruction of those only who are within the reach of our dwelling, or our acquaintance, whether they are wise or unwise; and sometimes that narrow sphere scarcely affords any person of great eminence in wisdom or learning, unless our instructor happen to have this character. And as for our own study and meditations, even when we arrive at some good degrees of learning, our advantage for further improvement in knowledge by them, is still far more contracted than what we may derive from reading.

3. When we read good authors we learn the best, the most laboured, and most refined sentiments even of those wise and learned men; for they have studied hard, and have committed to writing their maturest thoughts, and the result of their long study and experience: Whereas, by conversation, and in some lectures, we obtain many times only the present thoughts of our tutors or friends, which, though they may be bright and useful, yet, at first perhaps, may be sudden and indigested, and are mere hints which have arisen to no maturity.

4. It is another advantage of reading, that we may review what we have read; we may consult the page again and again, and meditate on it at successive seasons in our serenest and retired hours, having the book always at hand; but what we obtain by conversation and in lectures, is oftentimes lost again as soon as the company breaks up, or at least when the day vanishes; unless we happen to have the talent of a good

memory, or quickly retire and note down what remarkables we have found in those discourses. And for the same reason, and for want of retiring and writing, many a learned man has lost several useful meditations of his own, and could never recal them again.

III. The advantages of verbal instructions, by public or private lectures, are these:

1. There is something more sprightly, more delightful, and entertaining in the living discourse of a wise, a learned, and well-qualified teacher than there is in the silent and sedentary practice of reading. The very turn of voice, the good pronunciation, and the polite and alluring manner which some teachers have attained, will engage the attention, keep the soul fixed, and convey and insinuate into the mind the ideas of things in a more lively and forcible way, than the mere reading of books in the silence and retirement of the closet.

2. A tutor or instructor, when he paraphrases and explains other authors, can mark out the precise point of difficulty or controversy, and unfold it. He can shew you which paragraphs are of the greatest importance, and which are of less moment. He can teach his hearers what authors, or what parts of an author, are best worth reading on any particular subject; and thus save his disciples much time and pains, by shortening the labours of their closet and private studies. He can shew you what were the doctrines of the ancients in a compendium, which perhaps would cost much labour and the perusal of many books to attain. He can inform you what new doctrines or sentiments are rising in the world, before they come to be public; as well as acqnaint you with his own private thoughts, and his own experiments and observations; which never were, and perhaps never will be published to the world, and yet may be very valuable and useful.

3. A living instructor can convey to our senses those notions with which he would furnish our minds, when he teaches us natural philosophy, or most parts of mathematical learning. He can make the experiments before our eyes. He can describe figures and diagrams, point to the lines and angles, and make out the demonstration in a more intelligible manner by sensible means, which cannot be done so well by mere reading, even though we should have the same figures lying in a book before our eyes. A living teacher, therefore, is a most necessary help in these studies.

I might add also, that even where the subject of discourse is moral, logical, or rhetorical, &c. and which does not directly come under the notice of our senses, a tutor may explain his ideas by such familiar examples, and plain or simple similitudes, as seldom find place in books and writings.

4. When an instructor in his lectures delivers any matter of difficulty, or expresses himself in such a manner as seems obscure, so that you do not take up his ideas clearly or fully, you have opportunity, at least when the lecture is finished, or at other proper seasons, to enquire how such a sentence should be understood, or how such a difficulty may be explained and removed.

If there be permission given to free converse with the tutor, either in the midst of the lecture, or rather at the end of it, concerning any doubts or difficulties that occur to the hearer, this brings it very near to conversation or discourse.

IV. Conversation is the next method of improvement, and it is attended with the following advantages:

1. When we converse familiarly with a learned friend, we have his own help at hand

to explain to us every word and sentiment that seems obscure in his discourse, and to inform us of his whole meaning, so that we are in much less danger of mistaking his sense; whereas in books, whatsoever is really obscure, may also abide always obscure without remedy, since the author is not at hand, that we may enquire his sense.

If we mistake the meaning of our friend in conversation, we are quickly set right again; but in reading we many times go on in the same mistake, and are not capable of recovering ourselves from it. Thence it comes to pass, that we have so many contests in all ages about the meaning of ancient authors, and especially the sacred writers. Happy should we be, could we but converse with Moses, Isaiah, and St. Paul, and consult the prophets and apostles, when we meet with a difficult text! But that glorious conversation is reserved for the ages of future blessedness.

2. When we are discoursing upon any theme with a friend, we may propose our doubts and objections against his sentiments, and have them solved and answered at once.—The difficulties that arise in our minds may be removed by one enlightening word of our correspondent; whereas in reading, if a difficulty or question arise in our thoughts, which the author has not happened to mention, we must be content without a present answer or solution of it. Books cannot speak.

3. Not only the doubts which arise in the mind upon any subject of discourse are easily proposed and solved in conversation, but the very difficulties we meet with in books and in our private studies, may find a relief by friendly conference. We may pore upon a knotty point in solitary meditation many months without a solution, because perhaps we have gotten into a wrong track of thought; and our labour (while we are pursuing a false scent) is not only useless and unsuccessful, but it leads us perhaps into a long train of error for want of being corrected in the first step. But if we note down this difficulty when we read it, we may propose it to an ingenious correspondent when we see him; we may be relieved in a moment, and find the difficulty vanish: He beholds the object perhaps in a different view, sets it before us in quite another light, and leads us at once into evidence and truth, and that with a delightful surprise.

4. Conversation calls out into light what has been lodged in all the recesses and secret chambers of the soul: By occasional hints and incidents it brings old useful notions into remembrance; it unfolds and displays the hidden treasures of knowledge with which reading, observation, and study, had before furnished the mind. By mutual discourse the soul is awakened and allured to bring forth its hoards of knowledge, and it learns how to render them most useful to mankind. A man of vast reading without conversation is like a miser who lives only to himself.

5. In free and friendly conversation our intellectual powers are more animated, and our spirits act with a superior vigour in the quest and pursuit of unknown truths. There is a sharpness and sagacity of thought that attends conversation, beyond what we find whilst we are shut up reading and musing in our retirements. Our souls may be serene in solitude, but not sparkling, though perhaps we are employed in reading the works of the brightest writers. Often has it happened in free discourse, that new thoughts are strangely struck out, and the seeds of truth sparkle and blaze through the company, which in calm and silent reading would never have been excited. By conversation you will both give and receive this benefit; as flints when put into motion and striking against each other, produce living fire on both sides, which would never have risen from the same hard materials in a state of rest.

6. In generous conversation, amongst ingenious and learned men, we have a great advantage of proposing our private opinions, and of bringing our own sentiments to the test, and learning in a more compendious and a safer way what the world will judge of them, how mankind will receive them, what objections may be raised against them, what defects there are in our scheme, and how to correct our own mistakes; which advantages are not so easy to be obtained by our own private meditations: For the pleasure we take in our own notions, and the passion of self-love, as well as the narrowness of our own views, tempt us to pass too favourable an opinion on our own schemes; whereas the variety of genius in our several associates will give happy notices how our opinion will stand in the view of mankind.

7. It is also another considerable advantage of conversation, that it furnishes the student with the knowledge of men and the affairs of life, as reading furnishes him with book-learning. A man who dwells all his days among books may have amassed together a vast heap of notions, but he may be a mere scholar, which is a contemptible sort of character in the world. A hermit, who has been shut up in his cell in a college, has contracted a sort of mould and rust upon his soul, and all his airs of behaviour have a certain awkwardness in them; but these awkward airs are worn away by degrees in company: The rust and the mould are filed and brushed off by polite conversation. The scholar now becomes a citizen or a gentleman, a neighbour and a friend; he learns how to dress his sentiments in the fairest colours, as well as to set them in the strongest light. Thus he brings out his notions with honour, he makes some use of them in the world, and improves the theory by the practice.

But before we proceed too far in finishing a bright character by conversation, we should consider that something else is necessary besides an acquaintance with men and books: And therefore I add,

V. Mere lectures, reading, and conversation, without thinking, are not sufficient to make a man of knowledge and wisdom. It is our own thought, and reflection, study and meditation, must attend all the other methods of improvement, and perfect them. It carries these advantages with it:

1. Though observation and instruction, reading and conversation, may furnish us with many ideas of men and things, yet it is our own meditation and the labour of our own thoughts, that must form our judgment of things. Our own thoughts should join or disjoin these ideas in a proposition for ourselves: It is our own mind that must judge for ourselves concerning the agreement or disagreement of ideas, and form propositions of truth out of them. Reading and conversation may acquaint us with many truths and with many arguments to support them, but it is our own study and reasoning that must determine whether these propositions are true, and whether these arguments are just and solid.

It is confessed there are a thousand things which our eyes have not seen, and which would never come within the reach of our personal and immediate knowledge and observation, because of the distance of times and places: These must be known by consulting other persons; and that is done either in their writings or in their discourses. But after all, let this be a fixed point with us, that it is our own reflection and judgment must determine how far we should receive that which books or men inform us of, and how far they are worthy of our assent and credit.

2. It is meditation and study that transfers and conveys the notions and sentiments of others to ourselves, so as to make them properly our own. It is our own judgment upon them, as well as our memory of them, that makes them become our own property. It does, as it were, concoct our intellectual food, and turns it into a part of ourselves: Just as a man may call his limbs and his flesh his own, whether he borrowed the materials from the ox or the sheep, from the lark or the lobster; whether he derived it from corn or milk, the fruits of the trees or the herbs and roots of the earth; it is all now become one substance with himself, and he wields and manages those muscles and limbs for his own proper purposes, which once were the substance of other animals or vegetables; that very substance which last week was grazing in the field or swimming in the sea, waving in the milk-pail or growing in the garden, is now become part of the man.

3. By study and meditation, we improve the hints that we have acquired by observation, conversation, and reading; we take more time in thinking, and by the labour of the mind we penetrate deeper into themes of knowledge, and carry our thoughts sometimes much farther on many subjects, than we ever met with either in the books of the dead or discourses of the living. It is our own reasoning that draws out one truth from another, and forms a whole scheme of science from a few hints which we borrowed elsewhere.

By a survey of these things we may justly conclude, that he who spends all his time in hearing lectures, or poring upon books, without observation, meditation, or converse, will have but a mere historical knowledge of learning, and be able only to tell what others have known or said on the snbject: He that lets all his time flow away in conversation, without due observation, reading, or study, will gain but a slight and superficial knowledge, which will be in danger of vanishing with the voice of the speaker; and he that confines himself merely to his closet and his own narrow observation of things, and is taught only by his own solitary thoughts, without instruction by lectures, reading, or free conversation, will be in danger of a narrow spirit, a vain conceit of himself, and an unreasonable contempt of others; and after all, he will obtain but a very limited and imperfect view and knowledge of things, and he will seldom learn how to make that knowledge useful.

These five methods of improvement should be pursued jointly, and go hand in hand, where our circumstances are so happy as to find opportunity and conveniency to enjoy them all: Though I must give my opinion, that two of them, reading and meditation, should employ much more of our time than public lectures or conversation and discourse. As for observation, we may be always acquiring knowledge that way, whether we are alone or in company. But it will be for our further improvement, if we go over all these five methods of obtaining knowledge more distinctly, and more at large, and see what special advances in useful science we may draw from them all.

CHAPTER III.

RULES RELATING TO OBSERVATION.

THOUGH observation, in the strict sense of the word, and as it is distinguished from meditation and study, is the first means of our improvement, and in its strictest sense does not include in it any reasonings of the mind upon the things which we observe, or inferences drawn from them; yet the motions of the mind are so exceeding swift, that it is hardly possible for a thinking man to gain experiences or observations, without making some secret and short reflections upon them; and therefore in giving a few directions concerning this method of improvement, I shall not so narrowly confine myself to the first mere impression of objects on the mind by observation; but include also some hints which relate to the first, most easy, and obvious reflections or reasonings which arise from them.

I. Let the enlargement of your knowledge be one constant view and design in life; since there is no time or place, no transactions, occurrences, or engagements in life, which exclude us from this method of improving the mind. When we are alone, even in darkness and silence, we may converse with our own hearts, observe the working of our own spirits, and reflect upon the inward motions of our own passions, in some of the latest occurrences in life; we may acquaint ourselves with the powers and properties, the tendencies and inclinations, both of body and spirit, and gain a more intimate knowledge of ourselves. When we are in company, we may discover something more of human nature, of human passions and follies, and of human affairs, vices, and virtues, by conversing with mankind, and observing their conduct. Nor is there any thing more valuable than the knowledge of ourselves, and the knowledge of men, except it be the knowledge of God who made us, and our relation to him as our governor.

When we are in the house or the city, wheresoever we turn our eyes, we see the works of men; when we are abroad in the country, we behold more of the works of God. The skies and the ground above and beneath us, and the animal and vegetable world round about us, may entertain our observation with ten thousand varieties.

Endeavour therefore to derive some instruction or improvement of the mind from every thing which you see or hear, from every thing which occurs in human life, from every thing within you or without you.

Fetch down some knowledge from the clouds, the stars, the sun, the moon, and the revolution of all the planets: Dig and draw up some valuable meditations from the depths of the earth, and search them through the vast oceans of water: Extract some intellectual improvements from the minerals and metals; from the wonders of nature among the vegetables, the herbs, trees, and flowers. Learn some lessons from the birds, and the beasts, and the meanest insect. Read the wisdom of God and his admirable contrivance in them all. Read his almighty power, his rich and various goodness, in all the works of his hands.

From the day and the night, the hours and the flying minutes, learn a wise improve-

ment of time, and be watchful to seize every opportunity to increase in knowledge. From the vicissitudes and revolutions of nations and families, and from the various occurrences of the world, learn the instability of mortal affairs, the uncertainty of life, the certainty of death. From a coffin and a funeral, learn to meditate upon your own departure. From the vices and follies of others, observe what is hateful in them; consider how such a practice looks in another person, and remember that it looks as ill or worse in yourself. From the virtues of others, learn something worthy of your imitation.

From the deformity, the distress, or calamity of others, derive lessons of thankfulness to God, and hymns of grateful praise to your Creator, governor, and benefactor, who has formed you in a better mould, and guarded you from those evils. Learn also the sacred lesson of contentment in your own estate, and compassion to your neighbour under his miseries.

From your natural powers, sensations, judgment, memory, hands, feet, &c. make this inference, that they were not given you for nothing, but for some useful employment to the honour of your Maker, and for the good of your fellow-creatures, as well as for your own best interest and final happiness.

From the sorrows, the pains, the sicknesses, and sufferings that attend you, learn the evil of sin, and the imperfection of your present state. From your own sins and follies, learn the patience of God toward you, and the practice of humility toward God and men. Thus from every appearance in nature, and from every occurrence of life, you may derive natural, moral, and religious observations to entertain your minds, as well as rules of conduct in the affairs relating to this life, and that which is to come.

II. In order to furnish the mind with a rich variety of ideas, the laudable curiosity of young people should be indulged and gratified rather than discouraged. It is a very hopeful sign in young persons, to see them curious in observing, and inquisitive in searching into the greatest part of things that occur; nor should such an enquiring temper be frowned into silence, nor be rigorously restrained, but should rather be satisfied by proper answers given to all those queries. For this reason also, where time and fortune allow it, young people should be led into company at proper seasons, should be carried abroad to see the fields, and the woods, and the rivers, the buildings, towns, and cities, distant from their own dwelling; they should be entertained with the sight of strange birds, beasts, fishes, insects, vegetables, and productions both of nature and art of every kind, whether they are the products of their own or foreign nations: And in due time, where Providence gives opportunity, they may travel under a wise inspector, or tutor, to different parts of the world, for the same end, that they may bring home treasures of useful knowledge.

III. Among all these observations, write down what is more remarkable and uncommon: Reserve these remarks in store for proper occasions, and at proper seasons take a review of them. Such a practice will give you a habit of useful thinking: This will secure the workings of your soul from running to waste, and by this means even your looser moments will turn to happy account both here and hereafter. And whatever useful observations have been made, let them be at least some part of the subject of your conversation among your friends at next meeting.

Let the circumstances or situations of life be what or where they will, a man should never neglect this improvement which may be derived from observation. Let him travel

into the East or West Indies, and fulfil the duties of the military or the mercantile life there: Let him rove through the earth or the seas for his own humour as a traveller, or pursue his diversions in what part of the world he please as a gentleman; let prosperous or adverse fortune call him to the most distant parts of the globe; still let him carry on his knowledge and the improvement of his soul by wise observations. In due time, by this means, he may render himself some way useful to the societies of mankind.

Theobaldino, in his younger years, visited the forests of Norway on the account of trade and timber, and besides his proper observations of the growth of trees on those northern mountains, he learned there was a sort of people, called Finns, in those confines which border upon Sweden, whose habitation is in the woods: And he lived afterwards to give a good account of them, and some of their customs, to the Royal Society for the improvement of natural knowledge. Puteoli was taken captive into Turkey in his youth, and travelled with his master in their holy pilgrimage to Mecca, whereby he became more intelligent in the forms, ceremonies, and fooleries of the Mahometan worship, than perhaps ever any Briton knew before: And by his manuscripts, we are more acquainted in this last century with the Turkish sacreds than any one had ever informed us.

IV. Let us keep our minds as free as possible from passions and prejudices, for these will give a wrong turn to our observations both on persons and things. The eyes of a man in the jaundice make yellow observations on every thing; and the soul tinctured with any passion or prejudice, diffuses a false colour over the real appearances of things, and disguises many of the common occurrences of life: It never beholds things in a true light, nor suffers them to appear as they are. Whensoever, therefore, you would make proper observations, let self with all its influences stand aside as far as possible; abstract your own interest and your own concern from them, and bid all friendships and enmities stand aloof and keep out of the way, in the observations that you make relating to persons and things.

If this rule were well obeyed, we should be much better guarded against those common pieces of misconduct in the observations of men, *viz.* the false judgments of pride and envy. How ready is envy to mingle with the notices which we take of other persons? How often is mankind prone to put an ill sense upon the actions of their neighbours, to take a survey of them in an evil position, and in an unhappy light? And by this means, we form a worse opinion of our neighbours than they deserve, while at the same time, pride and self-flattery tempt us to make unjust observations on ourselves in our own favour. In all the favourable judgments we pass concerning ourselves, we should allow a little abatement on this account.

V. In making your observations on persons, take care of indulging that busy curiosity which is ever enquiring into private and domestic affairs, with an endless itch of learning the secret history of families. It is but seldom that such a prying curiosity attains any valuable ends; it often begets suspicions, jealousies, and disturbances, in households, and it is a frequent temptation to persons to defame their neighbours. Some persons cannot help telling what they know; a busy body is most liable to become a tattler upon every occasion.

VI. Let your observations even of persons and their conduct be chiefly designed in order to lead you to a better acquaintance with things, particularly with human nature;

and to inform you what to imitate and what to avoid, rather than to furnish out matter for the evil passions of the mind, or the impertinencies of discourse, and reproaches of the tongue.

VII. Though it may be proper sometimes to make your observations concerning persons, as well as things, the subject of your discourse in learned or useful conversation; yet what remarks you make on particular persons, especially to their disadvantage, should for the most part lie hid in your own breast, till some just and apparent occasion, some necessary call of Providence lead you to speak them.

If the character or conduct which you observe be greatly culpable, it should so much the less be published. You may treasure up such remarks of the follies, indecencies, or vices of your neighbours, as may be a constant guard against your practice of the same, without exposing the reputation of your neighbour on that account. It is a good old rule, that our conversation should rather be laid out on things than on persons; and this rule should generally be observed, unless names be concealed, wheresoever the faults or follies of mankind are our present theme.

Our late Archbishop Tillotson has written a small but excellent discourse on evil speaking, wherein he admirably explains, limits, and applies that general apostolic precept, *Speak evil of no man*, Tit. iii. 2.

VIII. Be not too hasty to erect general theories from a few particular observations, appearances, or experiments. This is what the logicians call a false induction. When general observations are drawn from so many particulars as to become certain and indubitable, these are jewels of knowledge, comprehending great treasure in a little room; but they are therefore to be made with the greater care and caution, lest errors become large and diffusive, if we should mistake in these general notions.

A hasty determination of some universal principles, without a due survey of all the particular cases which may be included in them, is the way to lay a trap for our own understandings in their pursuit of any subject, and we shall often be taken captives into mistake and falsehood.

Niveo in his youth observed that on three Christmas-days together there fell a good quantity of snow, and now he hath written it down in his almanack, as part of his wise remarks on the weather, that it will always snow at Christmas. *Euron*, a young lad, took notice ten times that there was a sharp frost when the wind was in the north-east, therefore in the middle of last July, he almost expected it should freeze, because the weathercocks shewed him a north-east wind; and he was still more disappointed, when he found it a very sultry season. It is the same hasty judgment, that hath thrown scandal on a whole nation for the sake of some culpable characters belonging to several particular natives of that country; whereas all the French men are not gay and airy; all the Italians are not jealous and revengeful; nor are all the English over-run with the spleen.

CHAPTER IV.

OF BOOKS AND READING.

I. THE world is full of books, but there are multitudes which are so ill written they were never worth any man's reading; and there are thousands more which may be good in their kind, yet are worth nothing when the month, or year, or occasion is passed for which they were written. Others may be valuable in themselves, for some special purpose or in some peculiar science, but are not fit to be perused by any but those who are engaged in that particular science or business. To what use is it for a divine, or physician, or a tradesman, to read over the huge volumes of reports of judged cases in the law? or for a lawyer to learn Hebrew and read the Rabbins? It is of vast advantage for improvement of knowledge and saving time, for a young man to have the most proper books for his reading recommended by a judicious friend.

II. Books of importance of any kind, and especially complete treatises on any subject, should be first read in a more general and cursory manner, to learn a little what the treatise promises, and what you may expect from the writer's manner and skill. And for this end I would advise always that the preface be read, and a survey taken of the table of contents, if there be one, before this first survey of the book. By this means you will not only be better fitted to give the book the first reading, but you will be much assisted in your second perusal of it, which should be done with greater attention and deliberation, and you will learn with more ease and readiness what the author pretends to teach. In your reading, mark what is new or unknown to you before, and review those chapters, pages, or paragraphs. Unless a reader has an uncommon and most retentive memory, I may venture to affirm, that there is scarce any book or chapter worth reading once that is not worthy of a second perusal. At least take a careful review of all the lines or paragraphs which you marked, and make a re-collection of the sections which you thought truly valuable.

There is another reason also why I would choose to take a superficial and cursory survey of a book, before I sit down to read it, and dwell upon it with studious attention; and that is, there may be several difficulties in it which we cannot easily understand and conquer at the first reading, for want of a fuller comprehension of the author's whole scheme. And therefore in such treatises we should not stay till we master every difficulty at the first perusal; for perhaps, many of these would appear to be solved when we have proceeded farther in that book, or would vanish of themselves upon a second reading.

What we cannot reach and penetrate at first, may be noted down as matter of after consideration and inquiry, if the pages that follow do not happen to strike a complete light on those which went before.

III. If three or four persons agree to read the same book, and each bring his own remarks upon it at some set hours appointed for conversation, and they communicate mutually their sentiments on the subject, and debate about it in a friendly manner, this practice will render the reading any author more abundantly beneficial to every one of them.

IV. If several persons, engaged in the same study, take into their hands distinct treatises on one subject, and appoint a season of communication once a week, they may inform each other in a brief manner concerning the sense, sentiments, and method of those several authors, and thereby promote each other's improvement, either by recommending the perusal of the same book to their companions, or perhaps by satisfying their inquiries concerning it by conversation, without every one's perusing it.

V. Remember that your business in reading or in conversation, especially on subjects of natural, moral, or divine science, is not merely to know the opinion of the author or speaker, for this is but the mere knowledge of history; but your chief business is to consider whether their opinions are right or no, and to improve your own solid knowledge of that subject by meditating on the themes of their writing or discourse. Deal freely with every author you read, and yield up your assent only to evidence and just reasoning on the subject.

Here I would be understood to speak only of human authors, and not of the sacred and inspired writings. In these, our business indeed is only to find out the sense, and understand the true meaning of the paragraph or page, and our assent then is bound to follow, when we are before satisfied that the writing is divine. Yet I might add also, that even this is just reasoning, and this is sufficient evidence to demand our assent.

But in the composures of men, remember you are a man as well as they; and it is not their reason but your own, that is given to guide you when you arrive at years of discretion, of manly age and judgment.

VI. Let this therefore be your practice, especially after you have gone through one course of any science in your academical studies; if a writer on that subject maintains the same sentiments as you do, yet if he does not explain his ideas or prove his positions well, mark the faults or defects, and endeavour to do it better, either in the margin of your book, or rather in some papers of your own, or at least let it be done in your private meditations. As for instance:

Where the author is obscure, enlighten him: Where he is imperfect, supply his deficiencies: Where he is too brief and concise, amplify a little, and set his notions in a fairer view: Where he is redundant, mark those paragraphs to be retrenched: When he trifles and grows impertinent, abandon those passages or pages: Where he argues, observe whether his reasons be conclusive: If the conclusion be true, and yet the argument weak, endeavour to confirm it by better proofs: Where he derives or infers any propositions darkly or doubtfully, make the justice of the inference appear, and add further inferences or corollaries, if such occur to your mind: Where you suppose he is in a mistake, propose your objections and correct his sentiments: What he writes so well as to approve itself to your judgment both as just and useful, treasure it up in your memory, and count it a part of your intellectual gains.

Note, Many of these same directions which I have now given, may be practised with regard to conversation, as well as reading, in order to render it useful in the most extensive and lasting manner.

VII. Other things also of the like nature may be usefully practised with regard to the authors which you read, *viz.* If the method of a book be irregular, reduce it into form by a little analysis of your own, or by hints in the margin: If those things are heaped together which should be separated, you may wisely distinguish and divide them. If several things relating to the same subject are scattered up and down sepa-

rately through the treatise, you may bring them all to one view by references; or if the matter of a book be really valuable and deserving, you may throw it into a better method, reduce it to a more logical scheme, or abridge it into a lesser form; all these practices will have a tendency both to advance your skill in logick and method, to improve your judgment in general, and to give you a fuller survey of that subject in particular. When you have finished the treatise, with all your observations upon it, recollect and determine what real improvements you have made by reading that author.

VIII. If a book has no index to it, or good table of contents, it is very useful to make one as you are reading it: Not with that exactness as to include the sense of every page and paragraph, which should be done if you designed to print it; but it is sufficient in your index to take notice only of those parts of the book which are new to you, or which you think well written, and well worthy of your remembrance or review.

Shall I be so free as to assure my younger friends, from my own experience, that these methods of reading will cost some pains in the first years of your study, and especially in the first authors which you peruse in any science, or on any particular subject; but the profit will richly compensate the pains. And in the following years of life, after you have read a few valuable books on any special subject in this manner, it will be very easy to read others of the same kind, because you will not usually find very much new matter in them which you have not already examined.

If the writer be remarkable for any peculiar excellencies or defects in his style or manner of writing, make just observations upon this also; and whatever ornaments you find there, or whatsoever blemishes occur in the language or manner of the writer, you may make just remarks upon them. And remember, that one book read over in this manner, with all this laborious meditation, will tend more to enrich your understanding, than the skimming over the surface of twenty authors.

IX. By perusing books in the manner I have described, you will make all your reading subservient not only to the enlargement of your treasures of knowledge, but also to the improvement of your reasoning powers.

There are many who read with constancy and diligence, and yet make no advances in true knowledge by it. They are delighted with the notions which they read or hear, as they would be with stories that are told, but they do not weigh them in their minds as in a just balance, in order to determine their truth or falsehood; they make no observations upon them, or inferences from them. Perhaps their eye slides over the pages, or the words slide over their ears, and vanish like a rhapsody of evening tales, or the shadows of a cloud flying over a green field in a summer's day. Or if they review them sufficiently to fix them in their remembrance, it is merely with a design to tell the tale over again, and shew what men of learning they are. Thus they dream out their days in a course of reading without real advantage. As a man may be eating all day, and for want of digestion is never nourished; so these endless readers may cram themselves in vain with intellectual food, and without real improvement of their minds, for want of digesting it by proper reflections.

X. Be diligent therefore in observing these directions. Enter into the sense and argument of the authors you read, examine all their proofs, and then judge of the truth or falsehood of their opinions; and thereby you shall not only gain a rich increase of

your understandings by those truths which the author teaches, when you see them well supported, but you shall acquire also by degrees a habit of judging justly and of reasoning well, in imitation of the good writer whose works you peruse.

This is laborious indeed, and the mind is backward to undergo the fatigue of weighing every argument and tracing every thing to its original. It is much less labour to take all things upon trust; believing is much easier than arguing. But when *Studentio* had once persuaded his mind to tie itself down to this method which I have prescribed, he sensibly gained an admirable facility to read, and judge of what he read, by his daily practice of it, and the man made large advances in the pursuit of truth; while *Plumbinus* and *Plumeo* made less progress in knowledge, though they had read over more folios. *Plumeo* skimmed over the pages like a swallow over the flowery meads in May. *Plumbinus* read every line and syllable, but did not give himself the trouble of thinking and judging about them. They both could boast in company of their great reading, for they knew more titles and pages than *Studentio*, but were far less acquainted with science.

I confess, those whose reading is designed only to fit them for much talk and little knowledge, may content themselves to run over their authors in such a sudden and trifling way; they may devour libraries in this manner, yet be poor reasoners at last, and have no solid wisdom or true learning. The traveller who walks on fair and softly in a course that points right, and examines every turning before he ventures upon it, will come sooner and safer to his journey's end, than he who runs through every lane he meets, though he gallop full speed all the day. The man of much reading and a large retentive memory, but without meditation, may become, in the sense of the world, a knowing man; and if he converses much with the ancients, he may attain the fame of learning too: But he spends his days afar off from wisdom and true judgment, and possesses very little of the substantial riches of the mind.

XI. Never apply yourselves to read any human author with a determination before-hand either for or against him, or with a settled resolution to believe or disbelieve, to confirm or to oppose whatsoever he saith; but always read with a design to lay your mind open to truth, and to embrace it wheresoever you find it, as well as to reject every falsehood, though it appear under never so fair a disguise. How unhappy are those men who seldom take an author into their hands, but they have determined, before they begin, whether they will like or dislike him! They have got some notion of his name, his character, his party, or his principles, by general conversation, or perhaps by some slight view of a few pages: And having all their own opinions adjusted before-hand, they read all that he writes with a prepossession either for or against him. Unhappy those who hunt and purvey for a party, and scrape together, out of every author, all those things, and those only, which favour their own tenets, while they despise and neglect all the rest!

XII. Yet take this caution. I would not be understood here as though I persuaded a person to live without any settled principles at all, by which to judge of men and books and things; or that I would keep a man always doubting about his foundations. The chief things that I design in this advice are these three:

1. That after our most necessary and important principles of science, prudence, and religion, are settled upon good grounds, with regard to our present conduct and our future hopes, we should read with a just freedom of thought all those books which

treat of such subjects as may admit of doubt and reasonable dispute. Nor should any of our opinions be so resolved upon, especially in younger years, as never to hear or to bear an opposition to them.

2. When we peruse those authors who defend our own settled sentiments, we should not take all their arguings for just and solid: But we should make a wise distinction betwixt the corn and the chaff, between solid reasoning and the mere superficial colours of it; nor should we readily swallow down all their lesser opinions because we agree with them in the greater.

3. That when we read those authors which oppose our most certain and established principles, we should be ready to receive any informations from them in other points, and not abandon at once every thing they say, though we are well fixed in opposition to their main point of arguing.

——*Fas est et ab hoste doceri.* VIRGIL.

Seize upon truth where'er 'tis found,
Amongst your friends, amongst your foes,
On christian or on heathen ground;
The flower's divine where'er it grows:
Neglect the prickles, and assume the rose.

XIII. What I have said hitherto on this subject, relating to books and reading, must be chiefly understood of that sort of books, and those hours of our reading and study, whereby we design to improve the intellectual powers of the mind with natural, moral, or divine knowledge. As for those treatises which are written to direct or to enforce and persuade our practice, there is one thing further necessary; and that is, that when our consciences are convinced that these rules of prudence or duty belong to us, and require our conformity to them, we should then call ourselves to account, and enquire seriously whether we have put them in practice or no; we should dwell upon the arguments, and impress the motives and methods of persuasion upon our own hearts, till we feel the force and power of them inclining us to the practice of the things which are there recommended.

If folly or vice be represented in its open colours, or its secret disguises, let us search our hearts, and review our lives, and enquire how far we are criminal; nor should we ever think we have done with the treatise till we feel ourselves in sorrow for our past misconduct, and aspiring after a victory over those vices, or till we find a cure of those follies begun to be wrought upon our souls.

In all our studies and pursuits of knowledge, let us remember that virtue and vice, sin and holiness, and the conformation of our hearts and lives to the duties of true religion and morality, are things of far more consequence than all the furniture of our understandings, and the richest treasures of mere speculative knowledge; and that, because they have a more immediate and effectual influence upon our eternal felicity or eternal sorrow.

XIV. There is yet another sort of books, of which it is proper I should say something while I am treating on this subject; and these are history, poesy, travels, books of diversion or amusement; among which we may reckon also little common pamphlets,

newspapers, or such like: For many of these, I confess, once reading may be sufficient, where there is a tolerable good memory.

Or when several persons are in company, and one reads to the rest such sort of writings, once hearing may be sufficient; provided that every one be so attentive, and so free as to make their occasional remarks on such lines or sentences, such periods or paragraphs as in their opinion deserve it. Now all those paragraphs or sentiments deserve a remark, which are new and uncommon, are noble and excellent for the matter of them, are strong and convincing for the argument contained in them, are beautiful and elegant for the language or the manner, or any way worthy of a second rehearsal; and at the request of any of the company let those paragraphs be read over again.

Such parts also of these writings as may happen to be remarkably stupid or silly, false or mistaken, should become subjects of an occasional criticism, made by some of the company; and this may give occasion to the repetition of them, for confirmation of the censure, for amusement, or diversion.

Still let it be remembered, that where the historical narration is of considerable moment, where the poesy, oratory, &c. shine with some degrees of perfection and glory, a single reading is neither sufficient to satisfy a mind that has a true taste of this sort of writings, nor can we make the fullest and best improvement of them without proper reviews, and that in our retirement as well as in company. Who is there that has any *goût* for polite writings that would be sufficiently satisfied with hearing the beautiful pages of Steele or Addison, the admirable descriptions of Virgil or Milton, or some of the finest poems of Pope, Young, or Dryden, once read over to them, and then lay them by for ever?

XV. Among these writings of the latter kind, we may justly reckon short miscellaneous essays on all manner of subjects: Such as the *Occasional Papers*, the *Tattlers*, the *Spectators*, and some other books that have been compiled out of the weekly or daily products of the press, wherein are contained a great number of bright thoughts, ingenious remarks, and admirable observations, which have had a considerable share in furnishing the present age with knowledge and politeness.

I wish every paper among these writings could have been recommended both as innocent and useful. I wish every unseemly idea and wanton expression had been banished from amongst them, and every trifling page had been excluded from the company of the rest when they had been bound up in volumes. But it is not to be expected, in so imperfect a state, that every page or piece of such mixed public papers should be entirely blameless and laudable. Yet in the main it must be confessed, there is so much virtue, prudence, ingenuity, and goodness in them, especially in eight volumes of Spectators, there is such a reverence of things sacred, so many valuable remarks for our conduct in life, that they are not improper to lie in parlours, or summer-houses, or places of usual residence, to entertain our thoughts in any moments of leisure, or vacant hours that occur. There is such a discovery of the follies, iniquities, and fashionable vices of mankind contained in them, that we may learn much of the humours and madnesses of the age and the public world, in our own solitary retirement, without the danger of frequenting vicious company, or receiving the mortal infection.

XVI. Among other books which are proper and requisite in order to improve our knowledge in general, or our acquaintance with any particular science, it is necessary

that we should be furnished with vocabularies and dictionaries of several sorts, *viz.* Of common words, idioms, and phrases, in order to explain their sense; of technical words or the terms of art, to shew their use in arts and sciences; of names of men, countries, towns, rivers, &c. which are called historical and geographical dictionaries, &c. These are to be consulted and used upon every occasion; and never let an unknown word pass in your reading, without seeking for its sense and meaning in some of these writers.

If such books are not at hand, you must supply the want of them, as well as you can, by consulting such as can inform you: And it is useful to note down the matters of doubt and enquiry in some pocket-book, and take the first opportunity to get them resolved either by persons or books when we meet with them.

XVII. Be not satisfied with the mere knowledge of the best authors that treat of any subject, instead of acquainting yourselves thoroughly with the subject itself. There is many a young student that is fond of enlarging his knowledge of books, and he contents himself with the notice he has of their title-page, which is the attainment of a bookseller rather than a scholar. Such persons are under a great temptation to practise these two follies: 1. To heap up a great number of books at greater expense than most of them can bear, and to furnish their libraries infinitely better than their understandings: And 2. When they have got such rich treasures of knowledge upon their shelves, they imagine themselves men of learning, and take a pride in talking of the names of famous authors, and the subjects of which they treat, without any real improvement of their own minds in true science or wisdom. At best, their learning reaches no farther than the indexes and tables of contents, while they know not how to judge or reason concerning the matters contained in those authors.

And indeed how many volumes of learning soever a man possesses, he is still deplorably poor in his understanding, till he has made these several parts of learning his own property, by reading and reasoning, by judging for himself, and remembering what he has read.

CHAPTER V.

JUDGMENT OF BOOKS.

I. IF we would form a judgment of a book which we have not seen before, the first thing that offers is the title-page, and we may sometimes guess a little at the import and design of a book thereby: Though it must be confessed, that titles are often deceitful, and promise more than the book performs. The author's name, if it be known in the world, may help us to conjecture at the performance a little more, and lead us to guess in what manner it is done. A perusal of the preface or introduction, which I before recommended, may farther assist our judgment; and if there be an index of the contents, it will give us still some advancing light.

If we have not leisure or inclination to read over the book itself regularly, then by the titles of chapters we may be directed to peruse several particular chapters or sections, and observe whether there be any thing valuable or important in them. We shall find hereby whether the author explains his ideas clearly, whether he reasons

strongly, whether he methodizes well, whether his thoughts and sense be manly and his manner polite: or, on the other hand, whether he be obscure, weak, trifling, and confused: Or, finally, whether the matter may not be solid and substantial, though the manner or style be rude and disagreeable.

II. By having run through several chapters and sections in this manner, we may generally judge whether the treatise be worth a complete perusal or no. But if, by such an occasional survey of some chapters, our expectation be utterly discouraged, we may well lay aside that book; for there is great probability he can be but an indifferent writer on that subject, if he affords but one prize to divers blanks, and it may be some downright blots too. The piece can hardly be valuable if in seven or eight chapters which we peruse there be but little truth, evidence, force of reasoning, beauty, and ingenuity of thought, &c. mingled with much error, ignorance, impertinence, dulness, mean and common thoughts, inaccuracy, sophistry, railing, &c. Life is too short, and time is too precious, to read every new book quite over in order to find that it is not worth the reading.

III. There are some general mistakes which persons are frequently guilty of in passing a judgment on the books which they read.

One is this, when a treatise is written but tolerably well, we are ready to pass a favourable judgment of it, and sometimes to exalt its character far beyond its merit, if it agree with our own principles, and support the opinions of our party. On the other hand, if the author be of different sentiments, and espouse contrary principles, we can find neither wit nor reason, good sense nor good language in it. Whereas, alas! if our opinions of things were certain and infallible truth, yet a silly author may draw his pen in the defence of them, and he may attack even gross errors with feeble and ridiculous arguments. Truth in this world is not always attended and supported by the wisest and safest methods; and error, though it can never be maintained by just reasoning, yet may be artfully covered and defended: An ingenious writer may put excellent colours upon his own mistakes. Some Socinians, who deny the atonement of Christ, have written well, and with much appearance of argument for their own unscriptural sentiments; and some writers for the Trinity and satisfaction of Christ have exposed themselves and the sacred doctrine by their feeble and foolish manner of handling it. Books are never to be judged of merely by their subject, or the opinion they represent, but by the justness of their sentiments, the beauty of their manner, the force of their expression, or the strength of reason and the weight of just and proper argument which appears in them.

But this folly and weakness of trifling instead of arguing does not happen to fall only to the share of Christian writers: There are some who have taken the pen in hand to support the deistical or antichristian scheme of our days, who make big pretences to reason upon all occasions, but seem to have left it quite behind them when they are jesting with the Bible, and grinning at the books which we call sacred. Some of these performances would scarcely have been thought tolerable, if they had not assaulted the christian faith, though they are now grown up to a place among the admired pens. I much question whether several of the rhapsodies called *The Characteristics*, would ever have survived the first edition, if they had not discovered so strong a tincture of infidelity, and now and then cast out a profane sneer at our holy religion. I have sometimes indeed been ready to wonder how a book, in the main so loosely written, should

ever obtain so many readers amongst men of sense. Surely they must be conscious in the perusal, that sometimes a patrician may write as idly as a man of plebeian rank, and trifle as much as an old school-man, though it is in another form. I am forced to say, there are few books that ever I read which made any pretences to a great genius, from which I derived so little valuable knowledge as from these treatises. There is indeed amongst them a lively pertness, a parade of literature, and much of what some folks now-a-days call politeness; but it is hard that we should be bound to admire all the reveries of this author, under the penalty of being unfashionable.

IV. Another mistake, which some persons fall into, is this. When they read a treatise on a subject with which they have but little acquaintance, they find almost every thing new and strange to them; their understandings are greatly entertained and improved by the occurrence of many things which were unknown to them before; they admire the treatise, and commend the author at once; whereas, if they had but attained a good degree of skill in that science, perhaps they would find that the author had written very poorly, that neither his sense nor his method was just and proper, and that he had nothing in him but what was very common or trivial in his discourses on that subject.

Hence it comes to pass, that *Corio* and *Faber*, who were both bred up to labour, and unacquainted with the sciences, shall admire one of the weekly papers, or a little pamphlet that talks pertly on some critical or learned theme, because the matter is all strange and new to them, and they join to extol the writer to the skies; and for the same reason a young academic shall dwell upon a journal or an observator that treats of trade and politics in a dictatorial style, and shall be lavish in praise of the author. While at the same time, persons well skilled in those different subjects hear the impertinent tattle with a just contempt; for they know how weak and awkward many of those little diminutive discourses are; and that those very papers of science, politics, or trade, which were so much admired by the ignorant, are, perhaps, but very mean performances; though it must be also confessed, there are some excellent essays in those papers, and that upon science as well as trade.

V. But there is a danger of mistake in our judgment of books on the other hand also: For when we have made ourselves masters of any particular theme of knowledge, and surveyed it long on all sides, there is perhaps scarce any writer on that subject who much entertains and pleases us afterwards, because we find little or nothing new in him; and yet in a true judgment, perhaps, his sentiments are most proper and just, his explications clear, and his reasonings strong, and all the parts of the discourse are well connected and set in a happy light; but we knew most of those things before, and therefore they strike us not, and we are in danger of discommending them.

Thus the learned and the unlearned have their several distinct dangers and prejudices ready to attend them in their judgment of the writings of men. These which I have mentioned are a specimen of them, and indeed but a mere specimen; for the prejudices that warp our judgment aside from truth are almost infinite and endless.

VI. Yet I cannot forbear to point out two or three more of these follies, that I may attempt something toward the correction of them, or at least, to guard others against them.

There are some persons of a forward and lively temper, and who are fond to intermeddle with all appearances of knowledge, and will give their judgment on a book as soon as the title of it is mentioned, for they would not willingly seem ignorant of any

thing that others know. And especially if they happen to have any superior character or possessions of this world, they fancy they have a right to talk freely upon every thing that stirs or appears, though they have no other pretence to this freedom. *Divitio* is worth forty thousand pounds; *Politulus* is a fine young gentleman, who sparkles in all the shining things of dress and equipage; *Aulinus* is a small attendant on a minister of state, and is at court almost every day. These three happened to meet in a visit, where an excellent book of warm and refined devotions lay in the window. What dull stuff is here! said *Divitio*, I never read so much nonsense in one page in my life, nor would I give a shilling for a thousand such treatises. *Aulinus*, though a courtier and not used to speak roughly, yet would not allow there was a line of good sense in the book, and pronounced him a madman that wrote it in his secret retirement, and declared him a fool that published it after his death. *Politulus* had more manners than to differ from men of such a rank and character, and therefore he sneered at the devout expressions as he heard them read, and made the divine treatise a matter of scorn and ridicule; and yet it was well known, that neither this fine gentleman, nor the courtier, nor the man of wealth, had a grain of devotion in them beyond their horses that waited at the door with their gilded chariots. But this is the way of the world: Blind men will talk of the beauty of colours, and of the harmony or disproportion of figures in painting; the deaf will prate of discords in music; and those who have nothing to do with religion, will arraign the best treatise on divine subjects, though they do not understand the very language of the scripture, nor the common terms or phrases used in christianity.

VII. I might here name another sort of judges, who will set themselves up to decide in favour of an author, or will pronounce him a mere blunderer, according to the company they have kept, and the judgment they have heard passed upon a book by others of their own stamp or size, though they have no knowledge or taste of the subject themselves. These, with a fluent and voluble tongue, become mere echoes of the praises or censures of other men. *Sonillus* happened to be in the room where the three gentlemen just mentioned gave out their thoughts so freely upon an admirable book of devotion; and two days afterwards he met with some friends of his, where this book was the subject of conversation and praise. *Sonillus* wondered at their dulness, and repeated the jests which he had heard cast upon the weakness of the author. His knowledge of the book and his decision upon it were all from hearsay, for he had never seen it: And if he had read it through, he had no manner of right to judge about the things of religion, having no more knowledge nor taste of any thing of inward piety, than a hedgehog or a bear has of politeness.

When I had written these remarks, *Probus*, who knew all these four gentlemen, wished they might have opportunity to read their own character as it is represented here. Alas! *Probus*, I fear it would do them very little good, though it may guard others against their folly: For there is never a one of them would find their own name in these characters if they read them, though all their acquaintance would acknowledge the features immediately, and see the persons almost alive in the picture.

VIII. There is yet another mischievous principle which prevails among some persons in passing a judgment on the writings of others, and that is, when, from the secret stimulation of vanity, pride, or envy, they despise a valuable book, and throw contempt

upon it by wholesale: And if you ask them the reason of their severe censure, they will tell you, perhaps, they have found a mistake or two in it, or there are a few sentiments or expressions not suited to their tooth and humour. *Bavius* cries down an admirable treatise of philosophy, and says there is atheism in it, because there are a few sentences that seem to suppose brutes to be mere machines. Under the same influence, *Momus* will not allow *Paradise Lost* to be a good poem, because he had read some flat and heavy lines in it, and he thought Milton had too much honour done him. It is a paltry humour that inclines a man to rail at any human performance because it is not absolutely perfect. Horace would give us a better example.

Sunt delicta quibus nos ignovisse velimus:
Nam neque chorda sonum reddit quam vult manus et mens.
Nec semper feriet quodcunque minabitur arcus:
Atque ubi plura nitent in carmine, non ego paucis
Offendor maculis, quas aut incuria fudit,
Aut humana parum cavit natura.

HOR. DE ART. POET.

THUS ENGLISHED:

Be not too rigidly censorious:
A string may jar in the best master's hand,
And the most skilful archer miss his aim:
So in a poem elegantly writ
I will not quarrel with a small mistake,
Such as our nature's frailty may excuse.

ROSCOMMON.

This noble translator of Horace, whom I here cite, has a very honourable opinion of Homer in the main, yet he allows him to be justly censured for some grosser spots and blemishes in him.

For who without aversion ever look'd
On holy garbage, tho' by Homer cook'd,
Whose railing heroes, and whose wounded gods,
Make some suspect he snores as well as nods.

Such wise and just distinctions ought to be made when we pass a judgment on mortal things, but envy condemns by wholesale. Envy is a cursed plant; some fibres of it are rooted almost in every man's nature, and it works in a sly and imperceptible manner, and that even in some persons who in the main are men of wisdom and piety. They know not how to bear the praises that are given to an ingenious author, especially if he be living and of their profession, therefore they will, if possible, find some blemish in his writings, that they may nibble and bark at it. They will endeavour to diminish the honour of the best treatise that has been written on any subject, and to render it useless by their censures, rather than suffer their envy to lie asleep, and the little mistakes of that author to pass unexposed. Perhaps they will commend the work in

general with a pretended air of candour, but pass so many sly and invidious remarks upon it afterward, as shall effectually destroy all their cold and formal praises.*

IX. When a person feels any thing of this invidious humour working in him, he may by the following considerations attempt the correction of it. Let him think with himself how many are the beauties of such an author whom he censures, in comparison of his blemishes, and remember that it is a much more honourable and good-natured thing to find out peculiar beauties than faults: True and undisguised candour is a much more amiable and divine talent than accusation. Let him reflect again, what an easy matter it is to find a mistake in all human authors, who are necessarily fallible and imperfect.

I confess where an author sets up himself to ridicule divine writers and things sacred, and yet assumes an air of sovereignty and dictatorship, to exalt and almost deify all the pagan ancients, and cast his scorn upon all the moderns, especially if they do but savour of miracles and the gospel, it is fit the admirers of this author should know that nature and these ancients are not the same, though some writers always unite them. Reason and nature never made these ancient heathens their standard, either of art or genius, of writing or heroism. Sir Richard Steele, in his little essay, called *The Christian Hero*, has shewn our Saviour and St. Paul in a more glorious and transcendent light, than a Virgil or a Homer could do for their Achilles, Ulysses, or Æneas; and I am persuaded if Moses and David had not been inspired writers, these very men would have ranked them at least with Herodotus and Horace, if not given them the superior place.

But where an author has many beauties consistent with virtue, piety, and truth, let not little critics exalt themselves, and shower down their ill-nature upon him, without bounds or measure; but rather stretch their own powers of soul till they write a treatise superior to that which they condemn. This is the noblest and surest manner of suppressing what they censure.

A little wit, or a little learning, with a good degree of vanity and ill-nature, will teach a man to pour out whole pages of remark and reproach upon one real or fancied mistake of a great and good author: And this may be dressed up by the same talents, and made entertaining enough to the world, who love reproach and scandal: But if the remarker would but once make this attempt, and try to outshine the author by writing a better book on the same subject, he would soon be convinced of his own insufficiency, and perhaps might learn to judge more justly and favourably of the performance of other men. A cobler or a shoe-maker may find some little fault with the latchet of a shoe that an Apelles had painted, and perhaps with justice too; when the whole figure and portraiture is such as none but Apelles could paint. Every poor low genius may cavil at what the richest and the noblest hath performed; but it is a sign of envy and malice, added to the littleness and poverty of genius, when such a cavil becomes a sufficient reason to pronounce at once against a bright author and a whole valuable treatise.

X. Another, and that a very frequent fault in passing a judgment upon books, is this,

* I grant when wisdom itself censures a weak and foolish performance, it will pass its severe sentence, and yet with an air of candour, if the author has any thing valuable in him; but envy will oftentimes imitate the same favourable airs, in order to make its false cavils appear more just and credible, when it has a mind to snarl at some of the brightest performances of a human writer.

that persons spread the same praises or the same reproaches over a whole treatise, and all the chapters in it, which are due only to some of them. They judge as it were by wholesale, without making a due distinction between the several parts or sections of the performance: and this is ready to lead those who hear them talk into a dangerous mistake. *Florus* is a great and just admirer of the late archbishop of Cambray, and mightily commends every thing he has written, and will allow no blemish in him: whereas the writings of that excellent man are not all of a piece, nor are those very books of his, which have a good number of beautiful and valuable sentiments in them, to be recommended throughout, or all at once without distinction. There is his *Demonstration of the Existence and Attributes of God*, which has justly gained an universal esteem, for bringing down some new and noble thoughts of the wisdom of the creation to the understanding of the unlearned, and they are such as well deserve the perusal of the men of science, perhaps as far as the 50th Section; but there are many of the following Sections which are very weakly written, and some of them built upon an enthusiastical and mistaken scheme, akin to the peculiar opinions of father Malebranche; such as Sect. 51, 53, "That we know the finite only by the ideas of the infinite." Sect. 55, 60, "That the superior reason in man is God himself acting in him." Sect. 61, 62, "That the idea of unity cannot be taken from creatures, but from God only." And several of his Sections, from 65, to 68, upon the doctrine of liberty, seem to be inconsistent. Again, toward the end of his book, he spends more time and pains than are needful in refuting the Epicurean fancy of atoms moving eternally through infinite changes, which might be done effectually in a much shorter and better way.

So in his *Posthumous Essays*, and his *Letters*, there are many admirable thoughts in practical and experimental religion, and very beautiful and divine sentiments in devotion; but sometimes in large paragraphs, or in whole chapters together, you find him in the clouds of mystic divinity, and he never descends within the reach of common ideas or common sense.

But remember this also, that there are but few such authors as this great man, who talks so very weakly sometimes, and yet in other places is so much superior to the greatest part of writers.

There are other instances of this kind, where men of good sense in the main set up for judges, but they carry too many of their passions about them, and then, like lovers, they are in rapture at the name of their fair idol: They lavish out all their incence upon that shrine, and cannot bear the thought of admitting a blemish in them.

You shall hear *Altisono* not only admire Casimire of Poland in his Lyrics, as the utmost purity and perfection of Latin poesy, but he will allow nothing in him to be extravagant or faulty, and will vindicate every line: Nor can I much wonder at it, when I have heard him pronounce Lucan the best of the ancient Latins, and idolize his very weaknesses and mistakes. I will readily acknowledge the odes of Casimire to have more spirit and force, more magnificence and fire in them, and in twenty places arise to more dignity and beauty than I could ever meet with in any of our modern poets: Yet I am afraid to say, that *Palla sutilis è luce* has dignity enough in it for a robe made for the Almighty, *Lib.* 4. *Od.* 7; *l.* 37. or that the "man of virtue," in *Od.* 3. *l.* 44, "under

the ruins of heaven and earth, will bear up the fragments of the fallen world with a comely wound on his shoulders."

——— laté ruenti
Subjiciens sua colla cælo
Mundum decoro vulnere fulciet;
Interque cæli fragmina.———

Yet I must needs confess also, that it is hardly possible a man should rise to so exalted and sublime a vein of poesy as Casimire, who is not in danger now and then of such extravagancies: But still they should not be admired or defended, if we pretend to pass a just judgment on the writings of the greatest men.

Milton is a noble genius, and the world agrees to confess it; his poem of *Paradise Lost* is a glorious performance, and rivals the most famous pieces of antiquity; but that reader must be deeply prejudiced in favour of the poet, who can imagine him equal to himself through all that work. Neither the sublime sentiments, nor dignity of numbers, nor force or beauty of expression are equally maintained, even in all those parts which require grandeur or beauty, force or harmony. I cannot but consent to Mr. Dryden's opinion, though I will not use his words, that for some scores of lines together, there is a coldness and flatness, and almost a perfect absence of that spirit of poesy which breathes, and lives, and flames in other pages.

XI. When you hear any person pretending to give his judgment of a book, consider with yourself whether he be a capable judge, or whether he may not lie under some unhappy bias or prejudice, for or against it, or whether he has made a sufficient enquiry to form his justest sentiments upon it.

Though he be a man of good sense, yet he is incapable of passing a true judgment of a particular book, if he be not well acquainted with the subject of which it treats, and the manner in which it is written, be it verse or prose; or if he hath not had opportunity or leisure to look sufficiently into the writing itself.

Again, though he be never so capable of judging on all other accounts, by the knowledge of the subject, and of the book itself, yet you are to consider also, whether there be any thing in the author, in his manner, in his language, in his opinions, and his particular party, which may warp the sentiments of him that judgeth, to think well or ill of the treatise, and to pass too favourable or too severe a sentence concerning it.

If you find that he is either an unfit judge because of his ignorance, or because of his prejudices, his judgment of that book should go for nothing. *Philographo* is a good divine, an useful preacher, and an approved expositor of scripture, but he never had a taste for any of the polite learning of the age: He was fond of every thing that appeared in a devout dress, but all verse was alike to him: He told me last week there was a very fine book of poems published on the three christian graces, Faith, Hope, and Charity; and a most elegant piece of oratory on the four last things, Death, Judgment, Heaven, and Hell. Do you think I shall buy either of those books merely on *Philographo*'s recommendation?

CHAPTER VI.

OF LIVING INSTRUCTIONS AND LECTURES, OF TEACHERS AND LEARNERS.

I. THERE are few persons of so penetrating a genius, and so just a judgment, as to be capable of learning the arts and sciences without the assistance of teachers. There is scarce any science so safely and so speedily learned, even by the noblest genius and the best books, without a tutor. His assistance is absolutely necessary for most persons, and it is very useful for all beginners. Books are a sort of dumb teachers, they point out the way to learning; but if we labour under any doubt or mistake, they cannot answer sudden questions, or explain present doubts and difficulties: This is properly the work of a living instructor.

II. There are very few tutors who are sufficiently furnished with such universal learning, as to sustain all the parts and provinces of instruction. The sciences are numerous, and many of them lie far wide of each other; and it is best to enjoy the instruction of two or three tutors at least, in order to run through the whole *Encyclopedia or Circle of Sciences*, where it may be obtained; then we may expect that each will teach the few parts of learning which are committed to his care in greater perfection. But where this advantage cannot be had with convenience, one great man must supply the place of two or three common instructors.

III. It is not sufficient that instructors be competently skillful in those sciences which they profess and teach; but they should have skill also in the art or method of teaching, and patience in the practice of it.

It is a great unhappiness indeed, when persons by a spirit of party or faction, or interest, or by purchase, are set up for tutors, who have neither due knowledge of science, nor skill in the way of communication. And, alas! there are others, who with all their ignorance and insufficiency, have self-admiration and effrontery enough to set up themselves: And the poor pupils fare accordingly, and grow lean in their understandings.

And let it be observed also, there are some very learned men who know much themselves, but have not the talent of communicating their own knowledge; or else they are lazy, and will take no pains at it. Either they have an obscure and perplexed way of talking, or they shew their learning uselessly, and make a long periphrasis on every word of the book they explain, or they cannot condescend to young beginners, or they run presently into the elevated parts of the science, because it gives themselves greater pleasure, or they are soon angry and impatient, and cannot bear with a few impertinent questions of a young, inquisitive, and sprightly genius; or else they skim over a science in a very slight and superficial survey, and never lead their disciples into the depths of it.

IV. A good tutor should have characters and qualifications very different from all these. He is such a one as both can and will apply himself with diligence and concern, and indefatigable patience to effect what he undertakes; to teach his disciples, and see that they learn to adapt his way and method as near as may be to the various dispositions, as well as to the capacities of those whom he instructs, and to enquire often into their progress and improvement.

And he should take particular care of his own temper and conduct, that there be nothing in him or about him which may be of ill example; nothing that may savour of a haughty temper, a mean and sordid spirit; nothing that may expose him to the aversion or to the contempt of his scholars, or create a prejudice in their minds against him and his instructions: But, if possible, he should have so much of a natural candour and sweetness mixed with all the improvements of learning, as might convey knowledge into the minds of his disciples with a sort of gentle insinuation and sovereign delight, and may tempt them into the highest improvements of their reason by a resistless and insensible force. But I shall have occasion to say more on this subject, when I come to speak more directly of the methods of the communication of knowledge.

V. The learner should attend with constancy and care on all the instructions of his tutor; and if he happens to be at any time unavoidably hindered, he must endeavour to retrieve the loss by double industry for time to come. He should always recollect and review his lectures, read over some other author or authors upon the same subject, confer upon it with his instructor or with his associates, and write down the clearest result of his present thoughts, reasonings, and enquiries, which he may have recourse to hereafter, either to re-examine them, and to apply them to proper use, or to improve them further to his own advantage.

VI. A student should never satisfy himself with bare attendance on the lectures of his tutor, unless he clearly takes up his sense and meaning, and understands the things which he teaches. A young disciple should behave himself so well as to gain the affection and the ear of his instructor, that upon every occasion he may with the utmost freedom ask questions, and talk over his own sentiments, his doubts and difficulties, with him, and in an humble and modest manner desire the solution of them.

VII. Let the learner endeavour to maintain an honourable opinion of his instructor, and heedfully listen to his instructions, as one willing to be led by a more experienced guide: And though he is not bound to fall in with every sentiment of his tutor, yet he should so far comply with him, as to resolve upon a just consideration of the matter, and try and examine it thoroughly with an honest heart, before he presume to determine against him. And then it should be done with great modesty, with an humble jealousy of himself, and apparent unwillingness to differ from his tutor, if the force of argument and truth did not constrain him.

VIII. It is a frequent and growing folly in our age, that pert young disciples soon fancy themselves wiser than those who teach them: At the first view, or upon a very little thought, they can discern the insignificancy, weakness, and mistake of what their teacher asserts. The youth of our day, by an early petulancy, and pretended liberty of thinking for themselves, dare reject at once, and that with a sort of scorn, all those sentiments and doctrines which their teachers have determined, perhaps after long and repeated consideration, after years of mature study, careful observation, and much prudent experience.

IX. It is true, teachers and masters are not infallible, nor are they always in the right; and it must be acknowledged, it is a matter of some difficulty for younger minds to maintain a just and solemn veneration for the authority and advice of their parents, and the instructions of their tutors, and yet at the same time to secure to themselves a just freedom in their own thoughts. We are sometimes too ready to imbibe all their sentiments without examination, if we reverence and love them; or, on the other hand,

if we take all freedom to contest their opinions, we are sometimes tempted to cast off that love and reverence to their persons which God and nature dictate. Youth is ever in danger of these two extremes.

X. But I think I may safely conclude thus: Though the authority of a teacher must not absolutely determine the judgment of his pupil, yet young, and raw, and unexperienced learners should pay all proper deference that can be to the instructions of their parents and teachers, short of absolute submission to their dictates. Yet still we must maintain this, that they should never receive any opinion into their assent, whether it be conformable or contrary to the tutor's mind, without sufficient evidence of it first given to their own reasoning powers.

CHAPTER VII.

OF LEARNING A LANGUAGE.

THE first thing required in reading an author, or in hearing lectures of a tutor, is, that you well understand the language in which they write or speak. Living languages, or such as are the native tongue of any nation in the present age, are more easily learned and taught by a few rules, and much familiar converse, joined to the reading some proper authors. The dead languages are such as cease to be spoken in any nation; and even these are more easy to be taught, as far as may be, in that method wherein living languages are best learned, that is, partly by rule, and partly by rote or custom. And it may not be improper in this place to mention a very few directions for that purpose.

I. Begin with the most necessary and most general observations and rules which belong to that language, compiled in the form of a grammar; and these are but few in most languages. The regular declensions and variations of nouns and verbs should be early and thoroughly learned by heart, together with twenty or thirty of the plainest and most necessary rules of syntax.

But let it be observed, that in almost all languages, some of the very commonest nouns and verbs have many irregularities in them: Such are the common auxiliary verbs *to be* and *to have*, *to do* and *to be done*, &c. the comparatives and superlatives of the words *good*, *bad*, *great*, *much*, *small*, *little*, &c. and these should be learned among the first rules and variations, because they continually occur.

But as to other words which are less frequent, let but few of the anomalies or irregularities of the tongue be taught among the general rules to young beginners. These will better come in afterwards to be learned by advanced scholars in a way of notes on the rules, as in the Latin grammar called *The Oxford Grammar*, or in Ruddiman's *Notes on his Rudiments*, &c. Or they may be learned by examples alone, when they do occur; or by a larger and more complete system of grammar, which descends to the more particular forms of speech: So the heteroclite nouns of the Latin tongue, which are taught in the school-book called *Quæ Genus*, should not be touched in the first learning of the rudiments of that tongue.

II. As the grammar by which you learn any tongue should be very short at first, so it must be written in a tongue with which you are well acquainted, and which is very familiar to you. Therefore I much prefer even the common English *Accedence* (as it is called) to any grammar whatsoever written in Latin for this end. The English *Acce-*

dence, has doubtless many faults: But those editions of it which were printed since the year 1728, under the correction of a learned professor, are the best; or the *English Rudiments of the Latin Tongue*, by that learned North Briton Mr. Ruddiman, which are, perhaps, the most useful books of this kind which I am acquainted with; especially because I would not depart too far from the ancient and common forms of teaching, which several good grammarians have done, to the great detriment of such lads as have been removed to other schools.

The tiresome and unreasonable method of learning the Latin tongue by a grammar with Latin rules, would appear even to those masters who teach it so, in its proper colours of absurdity and ridicule, if those very masters would attempt to learn the Chinese or Arabic tongue, by a grammar written in the Arabic or the Chinese language. Mr. Clarke, of Hull, has said enough in a few pages of the preface to his new grammar, 1723, to make that practice appear very irrational and improper; though he has said it in so warm and angry a manner that it has kindled Mr. Ruddiman to write against him, and to say what can be said to vindicate a practice, which, I think, is utterly indefensible.

III. At the same time when you begin the rules, begin also the practice. As for instance, when you decline *musa*, *musæ*, read and construe the same day some easy Latin author by the help of a tutor, or with some English translation: Choose such a book whose style is simple, and the subject of discourse is very plain, obvious, and not hard to be understood; many little books have been composed with this view, as Corderius's *Colloquies*, some of Erasmus's little writings, *The sayings of the wise men of Greece*, Cato's *Moral Distichs*, and the rest which are collected at the end of Mr. Ruddiman's *English grammar*, or the Latin Testament of Castellio's translation, which is accounted the purest Latin, &c. These are very proper upon this occasion, together with Æsop's and Phœdrus's *Fables*, and little stories, and the common and daily affairs of domestic life written in the Latin tongue. But let the higher poets, and orators, and historians, and other writers whose language is more laboured, and whose sense is more remote from common life, be rather kept out of sight till there be some proficiency made in the language.

It is strange, that masters should teach children so early Tully's *Epistles* or *Orations*, or the poems of Ovid or Virgil, whose sense is oftentimes difficult to find, because of the great transposition of the words; and when they have found the grammatical sense, they have very little use of it, because they have scarce any notion of the ideas and design of the writer, it being so remote from the knowledge of a child: Whereas little common stories and colloquies, and the rules of a child's behaviour, and such obvious subjects, will much better assist the memory of the words by their acquaintance with the things.

IV. Here it may be useful also to appoint the learner to get by heart the more common and useful words, both nouns and adjectives, pronouns and verbs, out of some well formed and judicious vocabulary. This will furnish him with names for the most familiar ideas.

V. As soon as ever the learner is capable, let the tutor converse with him in the tongue which is to be learned, if it be a living language, or if it be Latin, which is the living language of the learned world: Thus he will acquaint himself a little with it by rote as well as by rule, and by living practice as well as by reading the writings of the

dead. For if a child of two years old by this method learns to speak his mother-tongue, I am sure the same method will greatly assist and facilitate the learning of any other language to those who are older.

VI. Let the chief lessons and the chief exercises of schools, *verbi causâ*, where Latin is learnt, (at least for the first year or more) be the nouns, verbs, and general rules of syntax, together with a mere translation out of some Latin author into English; and let scholars be employed and examined by their teacher, daily, in reducing the words to their original or theme, to the first case of nouns or first tense of verbs, and giving an account of their formations and changes, their syntax and dependencies, which is called parsing. This is a most useful exercise to lead boys into a complete and thorough knowledge of what they are doing.

The English translations, which the learner has made, should be well corrected by the master, and then they should be translated back again for the next day's exercise by the child into Latin, while the Latin author is withheld from him: But he should have the Latin words given him in their first case and tense; and should never be left to seek them himself from a dictionary: And the nearer he translates it to the words of the author whence he derives his English, the more should the child be commended. Thus will he gain skill in two languages at once. I think Mr. Clarke has done good service to the public by his translations of Latin books for this end.

But let the foolish custom of employing every silly boy to make themes or declamations and verses upon moral subjects in a strange tongue, before he understands common sense even in his own language, be abandoned and cashiered for ever.

VII. As the learner improves, let him acquaint himself with the anomalous words, the irregular declensions of nouns and verbs, the more uncommon connections of words in syntax, and the exceptions to the general rules of grammar; but let them all be reduced, as far as possible, to those several original and general rules which he has learned, as the proper rank and place to which they belong.

VIII. While he is doing this, it may be proper for him to converse with authors which are a little more difficult, with historians, orators, and poets, &c. but let his tutor inform him of the Roman or Greek customs which occur therein. Let the lad then translate some parts of them into his mother-tongue, or into some other well known language, and thence back again into the original language of the author. But let the verse be translated into prose, for poesy does not belong to grammar.

IX. By this time he will be able to acquaint himself with some of the special emphases of speech, and the peculiar idioms of the tongue. He should be taught also the special beauties and ornaments of the language: And this may be done partly by the help of authors who have collected such idioms, and cast them into an easy method, and partly by the judicious remarks which his instructor may make upon the authors which he reads, wheresoever such peculiarities of speech or special elegancies occur.

X. Though the labour of learning all the lessons by heart, that are borrowed from poetical authors which they construe, is an unjust and unnecessary imposition upon the learner, yet he must take the pains to commit to memory the most necessary, if not all the common rules of grammar, with an example or two under each of them: And some of the select and most useful periods or sentences in the Latin or Greek author which he reads may be learned by heart, together with some of the choicer lessons,

out of their poets; and sometimes whole episodes out of heroic poems, &c. as well as whole odes among the lyrics, may deserve this honour.

XI. Let this be always carefully observed, that the learners perfectly understand the sense as well as the language of all those rules, lessons, or paragraphs which they attempt to commit to memory. Let the teacher possess them of their true meaning, and then the labour will become easy and pleasant: Whereas to impose on a child to get by heart a long scroll of unknown phrases or words, without any ideas under them, is a piece of useless tyranny, a cruel imposition, and a practice fitter for a jackdaw or a parrot, than for any thing that wears the shape of man.

XII. And here, I think, I have a fair occasion given me to consider that question which has been often debated in conversation, *viz.* Whether the teaching of a school full of boys to learn Latin by the heathen poets, as Ovid in his *Epistles*, and the silly fables of his *Metamorphoses;* Horace, Juvenal, and Martial, in their impure odes, satires, and epigrams, &c. is so proper and agreeable a practice in a Christian country?

XIII. 1. I grant the language and style of those men who wrote in their own native tongue, must be more pure and perfect in some nice elegancies and peculiarities, than modern writers of other nations, who have imitated them; and it is owned also, that the beauties of their poesy may much excel: But in either of these things, boys cannot be supposed to be much improved or injured by one or the other.

XIV. 2. It shall be confessed too, that modern poets, in every living language, have brought into their works so many words, epithets, phrases, and metaphors, from the heathen fables and stories of their gods and heroes, that, in order to understand these modern writers, it is necessary to know a little of those ancient follies: But it may be answered, that a good dictionary, or such a book as the *Pantheon*, or history of those gentile deities, &c. may give sufficient information of those stories, so far as they are necessary and useful to school-boys.

XV. 3. I will grant yet further, that lads who are designed to make great scholars or divines, may, by reading these heathen poets, be taught better to understand the writings of the ancient fathers against the heathen religion: And they learn here what ridiculous fooleries the gentile nations believed as the articles of their faith, what wretched and foul idolatries they indulged and practised as duties of religion, for want of the light of divine revelation. But this perhaps may be learned as well either by the *Panthcon*, or some other collection, at school; or after they have left the school, they may read what their own inclinations lead them to, and whatsoever of this kind may be really useful for them.

XVI. But the great question is, Whether all these advantages, which have been mentioned, will compensate for the long months and years that are wasted among their incredible and trifling romances, their false and shameful stories of the gods and goddesses and their amours, and the lewd heroes and vicious poets of the heathen world? Can these idle and ridiculous tales be of any real and solid advantage in human life? Do they not too often defile the mind with vain, mischievous, and impure ideas? Do they not stick long upon the fancy, and leave an unhappy influence upon youth? Do they not tincture the imagination with folly and vice very early, and pervert it from all that is good and holy?

XVII. Upon the whole survey of things, it is my opinion, that, for almost all boys who learn this tongue, it would be much safer to be taught Latin poesy, as soon and as

far as they can need it, from those excellent translations of David's Psalms, which are given us by Buchanan in the various measures of Horace; and the lower classes had better read Dr. Johnston's Translation of these Psalms, another elegant writer of the Scots nation, instead of Ovid's *Epistles;* for he has turned the same Psalms, perhaps with greater elegancy, into elegiac verse, whereof the learned W. Benson, Esq. has lately published a noble edition; and I hear that these Psalms are honoured with an increasing use in the schools of Holland and Scotland. A stanza or a couplet of these writers would now and then stick upon the minds of youth, and would furnish them infinitely better with pious and moral thoughts, and do something towards making them good men and Christians.

XVIII. A little book, collected from the Psalms of both these translators, Buchanan and Johnston, and a few other christian poets, would be of excellent use for schools to begin their instructions in Latin poesy; and I am well assured this would be richly sufficient for all those in lower rank, who never design a learned profession, and yet custom has foolishly bound them to learn that language.

But lest it should be thought hard to cast Horace and Virgil, Ovid and Juvenal entirely out of the schools, I add, if here and there a few lyric odes, or pieces of satires, or some episodes of heroic verse, with here and there an epigram of Martial, all which shall be clear and pure from the stains of vice and impiety, and which may inspire the mind with noble sentiments, fire the fancy with bright and warm ideas, or teach lessons of morality and prudence, were chosen out of those ancient Roman writers for the use of the schools, and were collected and printed in one moderate volume, or two at the most, it would be abundantly sufficient provision out of the Roman poets for the instruction of boys in all that is necessary in that age of life.

Surely Juvenal himself would not have the face to vindicate the masters who teach boys his 6th satire, and many paragraphs of several others, when he himself has charged us,

Nil dictu fœdum, visuque, hæc limina tangat
Intra quæ puer est.

SAT. 14.

THUS ENGLISHED:

Suffer no lewdness, nor indecent speech
Th' apartment of the tender youth to reach.

DRYDEN.

Thus far in answer to the foregoing question.

But I retire; for Mr. Clarke, of Hull, in his Treatise of Education, and Mr. Philips, preceptor to the Duke of Cumberland, have given more excellent directions for learning Latin.

XIX. When a language is learned, if it be of any use at all, it is a pity it should be forgotten again. It is proper, therefore, to take all just opportunities to read something frequently in that language, when other necessary and important studies will give you leave. As in learning any tongue, dictionaries which contain words and phrases should be always at hand: So they should be ever kept within reach by persons who would remember a tongue which they have learned. Nor should we at any time content our-

selves with a doubtful guess at the sense or meaning of any words which occur, but consult the dictionary, which may give us certain information, and thus secure us from mistake. It is mere sloth which makes us content ourselves with uncertain guesses; and indeed this is neither safe nor useful for persons who would learn any language or science, or have a desire to retain what they have acquired.

XX. When you have learned one or many languages never so perfectly, take heed of priding yourself in these acquisitions: They are but mere treasures of words, or instruments of true and solid knowledge, and whose chief design is to lead us into an acquaintance with things, or to enable us the more easily to convey those ideas, or that knowledge to others. An acquaintance with the various tongues is nothing else but a relief against the mischief which the building of Babel introduced: And were I master of as many languages as were spoken at Babel, I should make but a poor pretence to true learning or knowledge, if I had not clear and distinct ideas, and useful notions in my head under the words which my tongue could pronounce. Yet so unhappy a thing is human nature, that this sort of knowledge of sounds and syllables is ready to puff up the mind with vanity, more than the most valuable and solid improvements of it. The pride of a grammarian, or a critic, generally exceeds that of a philosopher.

CHAPTER VIII.

OF ENQUIRING INTO THE SENSE AND MEANING OF ANY WRITER OR SPEAKER, AND ESPECIALLY THE SENSE OF THE SACRED WRITINGS.

IT is a great unhappiness that there is such an ambiguity in words and forms of speech, that the same sentence may be drawn into different significations; whereby it comes to pass, that it is difficult sometimes for the reader exactly to hit upon the ideas which the writer or speaker had in his mind. Some of the best rules to direct us herein are such as these:

I. Be well acquainted with the tongue itself, or language wherein the author's mind is expressed. Learn not only the true meaning of each word, but the sense which those words obtain when placed in such a particular situation and order. Acquaint yourself with the peculiar power and emphasis of the several modes of speech, and the various idioms of the tongue. The secondary ideas which custom hath superadded to many words, should also be known, as well as the particular and primary meaning of them, if we would understand any writer. See Logic, Part I. Chap. 4. Sect. 3.

II. Consider the signification of those words and phrases, more especially in the same nation, or near the same age in which that writer lived, and in what sense they are used by authors of the same nation, opinion, sect, party, &c.

Upon this account, we may learn to interpret several phrases of the New Testament out of that version of the Hebrew Bible into Greek, which is called the Septuagint; for though that version be very imperfect and defective in many things, yet it seems to me evident, that the holy writers of the New Testament made use of that version many times in their citation of texts out of the Bible.

III. Compare the words and phrases in one place of an author, with the same or kindred words and phrases used in other places of the same author, which are generally called parallel places; and as one expression explains another which is like it, so sometimes a contrary expression will explain its contrary. Remember always that a writer best interprets himself: and as we believe the Holy Spirit to be the supreme agent in the writings of the Old Testament and the New, he can best explain himself. Hence that theological rule arises, that "Scripture is the best interpreter of scripture;" and therefore concordances, which shew us parallel places, are of excellent use for interpretation.

IV. Consider the subject of which the author is treating, and by comparing other places where he treats of the same subject, you may learn his sense in the place which you are reading, though some of the terms which he uses in those two places may be very different.

And on the other hand, if the author uses the same words where the subject of which he treats is not just the same, you cannot learn his sense by comparing those two places, though the mere words may seem to agree; for some authors, when they are treating of a quite different subject, may use perhaps the same words in a very different sense, as St. Paul does the words faith, and law, and righteousness.

V. Observe the scope and design of the writer: Enquire into his aim and end in that book, or section, or paragraph, which will help to explain particular sentences: For we suppose a wise and judicious writer directs his expressions generally toward his designed end.

VI. When an author speaks of any subject occasionally, let his sense be explained by those places where he treats of it distinctly and professedly: Where he speaks of any subject in mystical or metaphorical terms, explain them by other places, where he treats of the same subject in terms that are plain and literal: Where he speaks in an oratorical, affecting, or persuasive way, let this be explained by other places where he treats of the same theme in a doctrinal or instructive way: Where the author speaks more strictly and particularly on any theme, it will explain the more loose and general expressions: Where he treats more largely, it will explain the shorter hints and brief intimations: And wheresoever he writes more obscurely, search out some more perspicuous passages in the same writer, by which to determine the sense of that obscurer language.

VII. Consider not only the person who is introduced speaking, but the persons to whom the speech is directed, the circumstances of time and place, the temper and spirit of the speaker, as well as the temper and spirit of the hearers: In order to interpret scripture well, there needs a good acquaintance with the Jewish customs, some knowledge of the ancient Roman and Greek times and manners, which sometimes strike a strange and surprising light upon passages which before were very obscure.

VIII. In particular propositions, the sense of an author may be sometimes known by the inferences which he draws from them; and all those senses may be excluded which will not allow of that inference.

Note, This rule indeed is not always certain in reading and interpreting human authors, because they may mistake in drawing their inferences; but in explaining scripture it is a sure rule: for the sacred and inspired writers always make just inferences from their own propositions. Yet even in them we must take heed we do not

mistake an allusion for an inference, which is many times introduced almost in the same manner.

IX. If it be a matter of controversy, the true sense of the author is sometimes known by the objections that are brought against it. So we may be well assured, the Apostle speaks against our justification in the sight of God by our own works of holiness, in the 3d, 4th, and 5th, chapters of the Epistle to the Romans, because of the objection brought against him in the beginning of the 6th chapter, viz. *What shall we say then? shall we continue in sin that grace may abound?* which objection could never have been raised, if he had been proving our justification by our own works of righteousness.

X. In matters of dispute, take heed of warping the sense of the writer to your own opinion, by any latent prejudices of self-love and a party-spirit. It is this reigning principle of prejudice and party, that has given such a variety of senses both to the sacred writers and others, which would never have come into the mind of the reader, if he had not laboured under some such prepossessions.

XI. For the same reason take heed of the prejudices of passion, malice, envy, pride, or opposition to an author, whereby you may be easily tempted to put a false and invidious sense upon his words. Lay aside, therefore, a carping spirit, and read even an adversary with attention and diligence, with an honest design to find out his true meaning; do not snatch at little lapses and appearances of mistake, in opposition to his declared and avowed meaning: Nor impute any sense or opinion to him which he denies to be his opinion, unless it be proved by the most plain and express language.

Lastly, Remember that you treat every author, writer, or speaker, just as you yourselves would be willing to be treated by others, who are searching out the meaning of what you write or speak; and maintain upon your spirit an awful sense of the presence of God, who is the judge of hearts, and will punish those who by a base and dishonest turn of mind wilfully pervert the meaning of the sacred writers, or even of common authors, under the influence of culpable prejudices. See more, Logick, Part I. Chap. 6, Sect. 3. *Directions concerning the Definition of Names.*

CHAPTER IX.

RULES OF IMPROVEMENT BY CONVERSATION.

I. IF we would improve our minds by conversation, it is a great happiness to be acquainted with persons wiser than ourselves. It is a piece of useful advice, therefore, to get the favour of their conversation frequently, as far as circumstances will allow: and if they happen to be a little reserved, use all obliging methods to draw out of them what may increase your own knowledge.

II. Whatsoever company you are in, waste not the time in trifle and impertinence. If you spend some hours amongst children, talk with them according to their capacity: Mark the young buddings of infant reason; observe the different motions and distinct workings of the animal and the mind, as far as you can discern them; take notice by what degrees the little creature grows up to the use of his reasoning powers, and what

early prejudices beset and endanger his understanding. By this means you will learn how to address yourself to children for their benefit, and perhaps you may derive some useful philosophemes, or theorems, for your own entertainment.

III. If you happen to be in company with a merchant or a sailor, a farmer or a mechanic, a milk-maid or a spinster, lead them into a discourse of the matters of their own peculiar province or profession: for every one knows, or should know, his own business best. In this sense a common mechanic is wiser than a philosopher. By this means you may gain some improvement in knowledge from every one you meet.

IV. Confine not yourself always to one sort of company, or to persons of the same party or opinion, either in matters of learning, religion, or the civil life, lest, if you should happen to be nursed up or educated in early mistake, you should be confirmed and established in the same mistake, by conversing only with persons of the same sentiments. A free and general conversation with men of very various countries and of different parties, opinions, and practices, so far as it may be done safely, is of excellent use to undeceive us in many wrong judgments which we may have framed, and to lead us into juster thoughts. It is said when the king of Siam, near China, first conversed with some European merchants, who sought the favour of trading on his coast, he enquired of them some of the common appearances of summer and winter in their country; and when they told him of water growing so hard in their rivers, that men, and horses, and laden carriages passed over it, and that rain sometimes fell down as white and light as feathers, and sometimes almost as hard as stones, he would not believe a syllable they said: For ice, snow, and hail, were names and things utterly unknown to him and to his subjects in that hot climate: He renounced all traffic with such shameful liars, and would not suffer them to trade with his people. See here the natural effects of gross ignorance.

Conversation with foreigners, on various occasions, has a happy influence to enlarge our minds, and to set them free from many errors and gross prejudices we are ready to imbibe concerning them. *Domicillus* has never travelled five miles from his mother's chimney, and he imagines all outlandish men are *papishes*, and worship nothing but a cross. *Tityrus* the shepherd, was bred up all his life in the country, and never saw Rome; he fancied it to be only a huge village, and was therefore infinitely surprised to find such palaces, such streets, such glittering treasures and gay magnificence, as his first journey to the city shewed him, and with wonder he confesses his folly and mistake.

So Virgil introduces a poor shepherd,

Urbem quam dicunt Romam, Melibœe, putavi
Stultus ego huic nostræ similem, quò sæpe solemus
Pastores ovium teneros depellere fœtus, &c.

THUS ENGLISHED:

Fool that I was, I thought imperial Rome
Like market-towns, where once a week we come,
And thither drive our tender lambs from home.

Conversation would have given *Tityrus* a better notion of Rome, though he had never happened to travel thither.

V. In mixed company, among acquaintance and strangers, endeavour to learn

something from all. Be swift to hear, but be cautious of your tongue, lest you betray your ignorance, and perhaps offend some of those who are present too. The scripture severely censures those who speak evil of the things they know not. Acquaint yourself therefore sometimes with persons and parties which are far distant from your common life and customs: This is a way whereby you may form a wiser opinion of men and things. *Prove all things and hold fast that which is good*, is a divine rule, and it comes from the Father of light and truth. But young persons should practise it indeed with due limitation and under the eye of their elders.

VI. Be not frightened nor provoked at opinions different from your own. Some persons are so confident they are in the right, that they will not come within the hearing of any notions but their own: They canton out to themselves a little province in the intellectual world, where they fancy the light shines, and all the rest is darkness. They never venture into the ocean of knowledge, nor survey the riches of other minds, which are as solid, and as useful, and perhaps are finer gold than what they ever possessed. Let not men imagine there is no certain truth but in the sciences which they study, and amongst that party in which they were born and educated.

VII. Believe that it is possible to learn something from persons much below yourself. We are all short-sighted creatures; our views are also narrow and limited; we often see but one side of a matter, and do not extend our sight far and wide enough to reach every thing that has a connection with the thing we talk of: We see but in part, and know but in part, therefore it is no wonder we form not right conclusions, because we do not survey the whole of any subject or argument. Even the proudest admirer of his own parts might find it useful to consult with others, though of inferior capacity and penetration. We have a different prospect of the same thing, if I may so speak, according to the different position of our understandings towards it; a weaker man may sometimes light on notions which have escaped a wiser, and which the wiser man might make a happy use of, if he would condescend to take notice of them.

VIII. It is of considerable advantage when we are pursuing any difficult point of knowledge, to have a society of ingenious correspondents at hand, to whom we may propose it: For every man has something of a different genius and a various turn of mind, whereby the subject proposed will be shown in all its lights, it will be represented in all its forms, and every side of it be turned to view, that a juster judgment may be framed.

IX. To make conversation more valuable and useful, whether it be in a designed or accidental visit, among persons of the same or of different sexes, after the necessary salutations are finished, and the stream of common talk begins to hesitate, or runs flat and low, let some one person take a book which may be agreeable to the whole company, and by common consent let him read in it ten lines, or a paragraph or two, or a few pages, till some word or sentence gives an occasion for any of the company to offer a thought or two relating to that subject. Interruption of the reader should be no blame, for conversation is the business; whether it be to confirm what the author says, or to improve it, to enlarge upon it or to correct it, to object against it, or to ask any question that is akin to it; and let every one that please add their opinion and promote the conversation. When the discourse sinks again, or diverts to trifles, let him that reads pursue the page, and read on further paragraphs or pages, till some occasion is given by a word or sentence for a new discourse to be started, and that with the utmost ease and freedom. Such a method as this would prevent the hours of a visit from running

all to waste; and by this means, even among scholars, they will seldom find occasion for that too just and bitter reflection, "I have lost my time in the company of the learned."

By such a practice as this, young ladies may very honourably and agreeably improve their hours, while one applies herself to reading, the others employ their attention, even among the various artifices of the needle: But let all of them make their occasional remarks or inquiries. This will guard a great deal of that precious time from modish trifling, impertinence, or scandal, which might otherwise afford matter for painful repentance.

Observe this rule in general, whensoever it lies in your power to lead the conversation, let it be directed to some profitable point of knowledge or practice, so far as may be done with decency; and let not the discourse and the hours be suffered to run loose without aim or design: and when a subject is started, pass not hastily to another, before you have brought the present theme of discourse to some tolerable issue, or a joint consent to drop it.

X. Attend with sincere diligence while any one of the company is declaring his sense of the question proposed; hear the argument with patience, though it differ never so much from your sentiments, for you yourself are very desirous to be heard with patience by others who differ from you. Let not your thoughts be active and busy all the while to find out something to contradict, and by what means to oppose the speaker, especially in matters which are not brought to an issue. This is a frequent and unhappy temper and practice. You should rather be intent and solicitous to take up the mind and meaning of the speaker, zealous to seize and approve all that is true in his discourse; nor yet should you want courage to oppose where it is necessary; but let your modesty and patience, and a friendly temper, be as conspicuous as your zeal.

XI. When a man speaks with much freedom and ease, and gives his opinion in the plainest language of common sense, do not presently imagine you shall gain nothing by his company. Sometimes you will find a person who in his conversation or his writings delivers his thoughts in so plain, so easy, so familiar and perspicuous a manner, that you both understand and assent to every thing he saith, as fast as you read or hear it: hereupon some hearers have been ready to conclude in haste, surely this man saith none but common things. I knew as much before, or I could have said all this myself. This is a frequent mistake. *Pellucido* was a very great genius; when he spoke in the senate he was wont to convey his ideas in so simple and happy a manner as to instruct and convince every hearer, and to enforce the conviction through the whole illustrious assembly; and that with so much evidence, that you would have been ready to wonder, that every one who spoke had not said the same things: But *Pellucido* was the only man that could do it, the only speaker who had attained this art and honour. Such is the writer of whom Horace would say,

——Ut sibi quivis
Speret idem; sudet multùm, frustraque laboret
Ausus idem.

DE ART. POET.

Smooth be your style, and plain and natural,
To strike the sons of Wapping or Whitehall.
While others think this easy to attain,
Let them but try, and with their utmost pain
They'll sweat and strive to imitate in vain.

XII. If any thing seem dark in the discourse of your companion, so that you have not a clear idea of what is spoken, endeavour to obtain a clearer conception of it by a decent manner of enquiry. Do not charge the speaker with obscurity either in his sense or his words, but intreat his favour to relieve your own want of penetration, or to add an enlightening word or two, that you may take up his whole meaning.

If difficulties arise in your mind, and constrain your dissent to the things spoken, represent what objections some persons would be ready to make against the sentiments of the speaker, without telling him you oppose. This manner of address carries something more modest and obliging in it, than to appear to raise objections of your own by way of contradiction to him that spoke.

XIII. When you are forced to differ from him who delivers his sense on any point, yet agree as far as you can, and represent how far you agree; and if there be any room for it, explain the words of the speaker in such a sense to which you can in general assent, and so agree with him: Or at least, by a small addition or alteration of his sentiments shew your own sense of things. It is the practice and delight of a candid hearer, to make it appear how unwilling he is to differ from him that speaks. Let the speaker know that it is nothing but truth constrains you to oppose him, and let that difference be always expressed in few and civil and chosen words, such as may give the least offence.

And be careful always to take Solomon's rule with you, and let your correspondent fairly finish his speech before you reply; for *he that answereth a matter before he heareth it, it is folly and a shame unto him*, Prov. xviii. 13.

A little watchfulness, care, and practice, in younger life, will render all these things more easy, familiar, and natural to you, and will grow into habit.

XIV. As you should carry about with you a constant and sincere sense of your own ignorance, so you should not be afraid nor ashamed to confess this ignorance, by taking all proper opportunities to ask and enquire for farther information; whether it be the meaning of a word, the nature of a thing, the reason of a proposition, the custom of a nation, &c. never remain in ignorance for want of asking.

Many a person had arrived at some considerable degree of knowledge, if he had not been full of self-conceit, and imagined that he had known enough already, or else was ashamed to let others know that he was unacquainted with it. God and man are ready to teach the meek, the humble, and the ignorant; but he that fancies himself to know any particular subject well, or that will not venture to ask a question about it, such a one will not put himself into the way of improvement by inquiry and diligence. A fool may be wiser in his own conceit than ten men who can render a reason, and such a one is very likely to be an everlasting fool; and perhaps also it is a silly shame renders his folly incurable.

Stultorum incurata pudor malus ulcera celat.

HOR. EPIST. 16. LIB. I.

IN ENGLISH THUS:

If fools have ulcers, and their pride conceal 'em;
They must have ulcers still, for none can heal 'em.

XV. Be not too forward, especially in the younger part of life, to determine any question in company with an infallible and peremptory sentence, nor speak with assuming airs, and with a decisive tone of voice. A young man in the presence of his elders should rather hear and attend, and weigh the arguments which are brought for the proof or refutation of any doubtful proposition: And when it is your turn to speak, propose your thoughts rather in way of enquiry. By this means your mind will be kept in a fitter temper to receive truth, and you will be more ready to correct and improve your own sentiments, where you have not been too positive in affirming them. But if you have magisterially decided the point, you will find a secret unwillingness to retract, though you should feel an inward conviction that you were in the wrong.

XVI. It is granted, indeed, that a season may happen, when some bold pretender to science may assume haughty and positive airs to assert and vindicate a gross and dangerous error, or to renounce and vilify some very important truth: And if he has a popular talent of talking, and there be no remonstrance made against him, the company may be tempted too easily to give their assent to the impudence and infallibility of the presumer. They may imagine a proposition so much vilified can never be true, and that a doctrine which is so boldly censured and renounced can never be defended. Weak minds are too ready to persuade themselves, that a man would never talk with so much assurance unless he were certainly in the right, and could well maintain and prove what he said. By this means truth itself is in danger of being betrayed or lost, if there be no opposition made to such a pretending talker.

Now in such a case even a wise and a modest man may assume airs too, and repel insolence with its own weapons. There is a time, as Solomon, the wisest of men, teaches us, when *a fool should be answered according to his folly, lest he be wise in his own conceit,* and lest others too easily yield up their faith and reason to his imperious dictates. Courage and positivity are never more necessary than on such an occasion. But it is good to join some argument with them of real and convincing force, and let it be strongly pronounced too.

When such a resistance is made, you shall find some of these bold talkers will draw in their horns, when their fierce and feeble pushes against truth and reason are repelled with pushing and confidence. It is pity indeed that truth should ever need such sort of defences; but we know that a triumphant assurance hath sometimes supported gross falsehoods, and a whole company have been captivated to error by this means, till some man with equal assurance has rescued them. It is pity that any momentous point of doctrine should happen to fall under such reproaches, and require such a mode of vindication: Though, if I happen to hear it, I ought not to turn my back and to sneak off in silence, and leave the truth to lie baffled, bleeding, and slain. Yet, I must confess, I should be glad to have no occasion ever given me to fight with any man at this sort of weapons, even though I should be so happy as to silence his insolence and obtain an evident victory.

XVII. Be not fond of disputing every thing *pro* and *con*, nor indulge yourself to shew your talent of attacking and defending. A logick which teaches nothing else, is little worth. This temper and practice will lead you just so far out of the way of knowledge, and divert your honest enquiry after the truth which is debated or sought. In set disputes, every little straw is often laid hold on to support our own cause; every

thing that can be drawn in any way to give colour to our argument is advanced, and that perhaps with vanity and ostentation. This puts the mind out of a proper posture to seek and receive the truth.

XVIII. Do not bring a warm party-spirit into a free conversation, which is designed for mutual improvement in the search of truth. Take heed of allowing yourself in those self-satisfied assurances, which keep the doors of the understanding barred fast against the admission of any new sentiments. Let your soul be ever ready to hearken to further discoveries, from a constant and ruling consciousness of our present fallible and imperfect state; and make it appear to your friends, that it is no hard task for you to learn and pronounce those little words, "I was mistaken," how hard soever it be for the bulk of mankind to pronounce them.

XIX. As you may sometimes raise enquiries for your own instruction and improvement, and draw out the learning, wisdom, and fine sentiments of your friends, who perhaps may be too reserved or modest; so at other times, if you perceive a person unskilful in the matter of debate, you may by questions aptly proposed in the Socratic method, lead him into a clearer knowledge of the subject: Then you become his instructor in such a manner as may not appear to make yourself his superior.

XX. Take heed of affecting always to shine in company above the rest, and to display the riches of your own understanding or your oratory, as though you would render yourself admirable to all that are present. This is seldom well taken in polite company; much less should you use such forms of speech as should insinuate the ignorance or dulness of those with whom you converse.

XXI. Though you should not affect to flourish in a copious harangue and a diffusive style in company, yet neither should you rudely interrupt and reproach him that happens to use it: But when he has done speaking, reduce his sentiments into a more contracted form: not with a show of correcting, but as one who is doubtful whether you hit upon his true sense or no. Thus matters may be brought more easily from a wild confusion into a single point, questions may be sooner determined, and difficulties more readily removed.

XXII. Be not so ready to charge ignorance, prejudice, and mistake upon others, as you are to suspect yourself of it: And in order to shew how free you are from prejudices, learn to bear contradiction with patience: Let it be easy to you to hear your own opinion strongly opposed, especially in matters which are doubtful and disputable amongst men of sobriety and virtue. Give a patient hearing to arguments on all sides, otherwise you give the company occasion to suspect that it is not the evidence of truth has led you into this opinion, but some lazy anticipation of judgment, some beloved presumption, some long and rash possession of a party-scheme, in which you desire to rest undisturbed. If your assent has been established upon just and sufficient grounds, why should you be afraid to let the truth be put to the trial of argument?

XXIII. Banish utterly out of all conversation, and especially out of all learned and intellectual conference, every thing that tends to provoke passion, or raise a fire in the blood. Let no sharp language, no noisy exclamations, no sarcasms or biting jests be heard among you; no perverse or invidious consequences be drawn from each other's opinions, and imputed to the person: Let there be no wilful perversion of another's meaning; no sudden seizure of a lapsed syllable to play upon it, nor any abused construction of an innocent mistake: Suffer not your tongue to insult a modest

opponent that begins to yield; let there be no crowing and triumph, even where there is evident victory on your side. All these things are enemies to friendship, and the ruin of free conversation. The impartial search of truth requires all calmness and serenity, all temper and candour: Mutual instruction can never be attained in the midst of passion, pride, and clamour, unless we suppose in the midst of such a scene there is a loud and penetrating lecture read by both sides on the follies and shameful infirmities of human nature.

XXIV. Whensoever therefore any unhappy word shall arise in company, that might give you a reasonable disgust, quash the rising resentment, be it never so just, and command your soul and your tongue into silence, lest you cancel the hopes of all improvement for that hour, and transform the learned conversation into the mean and vulgar form of reproaches and railing. The man who began to break the peace in such a society, will fall under the shame and conviction of such a silent reproof, if he has any thing ingenuous about him. If this should not be sufficient, let a grave admonition, or a soft and gentle turn of wit, with an air of pleasantry, give the warm disputer an occasion to stop the progress of his indecent fire, if not to retract the indecency and quench the flame.

XXV. Inure yourself to a candid and obliging manner in all your conversation, and acquire the art of pleasing address, even when you teach as well as when you learn, and when you oppose as well as when you assert or prove. This degree of politeness is not to be attained without a diligent attention to such kind of directions as are here laid down, and a frequent exercise and practice of them.

XXVI. If you would know what sort of companions you should select for the cultivation and advantage of the mind, the general rule is, choose such as by their brightness of parts and their diligence in study, or by their superior advancement in learning, or peculiar excellency in any art, science, or accomplishment, divine or human, may be capable of administering to your improvement; and be sure to maintain and keep some due regard to their moral character always, lest, while you wander in quest of intellectual gain, you fall into the contagion of irreligion and vice. No wise man would venture into a house infected with the plague, in order to see the finest collections of any virtuoso in Europe.

XXVII. Nor is it every sober person of your acquaintance, no, nor every man of bright parts, or rich in learning, that is fit to engage in free conversation for the enquiry after truth. Let a person have never so illustrious talents, yet he is not a proper associate for such a purpose, if he lie under any of the following infirmities:

1. If he be exceedingly reserved, and hath either no inclination to discourse, or no tolerable capacity of speech and language for the communication of his sentiments.

2. If he be haughty and proud of his knowledge, imperious in his airs, and is always fond of imposing his sentiments on all the company.

3. If he be positive and dogmatical in his own opinions, and will dispute to the end; if he will resist the brightest evidence of truth rather than suffer himself to be overcome, or yield to the plainest and strongest reasonings.

4. If he be one who always affects to outshine all the company, and delights to hear himself talk and flourish upon a subject, and make long harangues, while the rest must be all silent and attentive.

5. If he be a person of a whiffling and unsteady turn of mind, who cannot keep close

to a point of controversy, but wanders from it perpetually, and is always solicitous to say something, whether it be pertinent to the question or no.

6. If he be fretful and peevish, and given to resentment upon all occasions; if he knows not how to bear contradiction, or is ready to take things in a wrong sense; if he is swift to feel a supposed offence, or to imagine himself affronted, and then break out into a sudden passion, or retain silent and sullen wrath.

7. If he affect wit on all occasions, and is full of his conceits and puns, quirks or quibbles, jests and repartees; these may agreeably entertain and animate an hour of mirth, but they have no place in the search after truth.

8. If he carry always about with him a sort of craft, and cunning, and disguise, and act rather like a spy than a friend. Have a care of such a one as will make an ill use of freedom in conversation, and immediately charge heresy upon you, when you happen to differ from those sentiments which authority or custom has established.

In short, you should avoid the man in such select conversation, who practises any thing that is unbecoming the character of a sincere, free, and open searcher after truth.

Now though you may pay all the relative duties of life to persons of these unhappy qualifications, and treat them with decency and love, so far as religion and humanity oblige you, yet take care of entering into a free debate on matters of truth or falsehood in their company, and especially about the principles of religion. I confess, if a person of such a temper happens to judge and talk well on such a subject, you may hear him with attention and derive what profit you can from his discourse; but he is by no means to be chosen for a free conference in matters of enquiry and knowledge.

XXVIII. While I would persuade you to beware of such persons, and abstain from too much freedom of discourse among them, it is very natural to infer that you should watch against the working of these evil qualities in your own breast, if you happen to be tainted with any of them yourself. Men of learning and ingenuity will justly avoid your acquaintance, when they find such an unhappy and unsociable temper prevailing in you.

XXIX. To conclude: When you retire from company, then converse with yourself in solitude, and enquire what you have learned for the improvement of your understanding, or for the rectifying your inclinations, for the increase of your virtues, or the meliorating your conduct and behaviour in any future parts of life. If you have seen some of your company candid, modest, humble in their manner, wise and sagacious, just and pious in their sentiments, polite and graceful, as well as clear and strong in their expression, and universally acceptable and lovely in their behaviour, endeavour to impress the idea of all these upon your memory, and treasure them up for your imitation.

XXX. If the laws of reason, decency, and civility, have not been well observed among your associates, take notice of these defects for your own improvement: And from every occurrence of this kind, remark something to imitate or to avoid, in elegant, polite, and useful conversation. Perhaps you will find that some persons present have really displeased the company by an excessive and too visible an affectation to please, that is, by giving loose to servile flattery, or promiscuous praise; while others were as ready to oppose and contradict every thing that was said. Some have deserved just censure for a morose and affected taciturnity, and others have been anxious and careful lest their silence should be interpreted a want of sense, and therefore they have ventured

to make speeches, though they had nothing to say which was worth hearing. Perhaps you will observe, that one was ingenious in his thoughts and bright in his language, but he was so top-full of himself, that he let it spill on all the company; that he spoke well indeed, but that he spoke too long, and did not allow equal time or liberty to his associates. You will remark that another was full charged to let out his words before his friend had done speaking, or impatient of the least opposition to any thing he said. You will remember that some persons have talked at large, and with great confidence, of things which they understood not, and others counted every thing tedious and intolerable that was spoken upon subjects out of their sphere, and they would fain confine the conference entirely within the limits of their own narrow knowledge and study. The errors of conversation are almost infinite.

XXXI. By a review of such irregularities as these, you may learn to avoid those follies and pieces of ill conduct which spoil good conversation, or make it less agreeable and less useful; and by degrees you will acquire that delightful and easy manner of address and behaviour in all useful correspondences, which may render your company every where desired and beloved; and at the same time, among the best of your companions, you may make the highest improvement in your intellectual acquisitions, that the discourse of mortal creatures will allow, under all our disadvantages in this sorry state of mortality. But there is a day coming, when we shall be seized away from this lower class in the school of knowledge, where we labour under the many dangers and darknesses, the errors and the incumbrances of flesh and blood, and our conversation shall be with angels, and more illuminated spirits, in the upper regions of the universe.

CHAPTER X.

OF DISPUTES.

I. UNDER the general head of Conversation for the Improvement of the Mind, we may rank the practice of disputing; that is, when two or more persons appear to maintain different sentiments, and defend their own, or oppose the other's opinion in alternate discourse by some methods of argument.

II. As these disputes often arise in good earnest, where the two contenders do really believe the different propositions which they support; so sometimes they are appointed as mere trials of skill in academies, or schools, by the students: Sometimes they are practised, and that with apparent fervour, in courts of judicature by lawyers, in order to gain the fees of their different clients, while both sides perhaps are really of the same sentiment with regard to the cause which is tried.

III. In common conversation, disputes are often managed without any forms of regularity or order, and they turn to good or evil purposes, chiefly according to the temper of the disputants. They may sometimes be successful to search out truth, sometimes effectual to maintain truth, and convince the mistaken, but at other times a dispute is a mere scene of battle in order to victory and vain triumph.

IV. There are some few general rules which should be observed in all debates whatsoever, if we would find out truth by them, or convince a friend of his error, even though they be not managed according to any settled forms of disputation: And as

there are almost as many opinions and judgments of things as there are persons, so when several persons happen to meet, and confer together upon any subject, they are ready to declare their different sentiments, and support them by such reasonings as they are capable of. This is called debating, or disputing, as is above described.

V. When persons begin a debate, they should always take care that they are agreed in some general principles or propositions, which either more nearly or remotely affect the question in hand; for otherwise they have no foundation or hope of convincing each other; they must have some common ground to stand upon while they maintain the contest.

When they find they agree in some remote propositions, then let them search farther, and enquire how near they approach to each other's sentiments; and whatsoever propositions they agree in, let these lay a foundation for the mutual hope of conviction. Hereby you will be prevented from running at every turn to some original and remote propositions and axioms, which practice both entangles and prolongs a dispute. As for instance, if there was a debate proposed between a Protestant and a Papist, whether there be such a place as purgatory? Let them remember that they both agree in this point, that Christ has made satisfaction or atonement for sin, and upon this ground let them both stand, while they search out the controverted doctrine of purgatory by way of conference or debate.

VI. The question should be cleared from all doubtful terms and needless additions; and all things that belong to the question should be expressed in plain and intelligible language. This is so necessary a thing, that without it, men will be exposed to such sort of ridiculous contests as was found one day between two unlearned combatants, *Sartor* and *Sutor*, who assaulted and defended the doctrine of transubstantiation with much zeal and violence: But *Latino* happening to come into their company, and enquiring the subject of their dispute, asked each of them what he meant by that long hard word transubstantiation? *Sutor* readily informed him, that he understood, bowing at the name of Jesus. But *Sartor* assured him that he meant nothing but bowing at the high altar: "No wonder then," said *Latino*, "that you cannot agree, when you neither understand one another, nor the word about which you contend." I think the whole family of the *Sartors* and *Sutors* would be wiser if they avoided such kind of debates, till they understood the terms better. But, alas! even their wives carry on such conferences; the other day one was heard in the street, explaining to her less learned neighbour the meaning of metaphysical science; and she assured her, that as physics were medicines for the body, so metaphysics was physic for the soul: Upon this they went on to dispute the point how far the *divine* excelled the *doctor*.

Auditum admissi risum teneatis amici?
Ridentem dicere verum quid vetat? HOR.

Can it be faulty to repeat
A dialogue that walk'd the street?
Or can my gravest friends forbear
A laugh, when such disputes they hear?

VII. And not only the sense and meaning of the words used in the question should be settled and adjusted between the disputants, but the precise point of enquiry should

be distinctly fixed; the question in debate should be limited precisely to its special extent, or declared to be taken in its more general sense. As, for instance, if two men are contending whether civil government be of divine right or no; here it must be observed, the question is not whether monarchy in one man, or a republic in multitudes of the people, or an aristocracy in a few of the chief, is appointed of God as necessary; but whether civil government, in its most general sense, or in any form whatsoever, is derived from the will and appointment of God? Again, The point of enquiry should be limited further. Thus, the question is not whether government comes from the will of God by the light of revelation? for that is granted; but whether it is derived from the will of God by the light of reason too? This sort of specification or limitation of the question, hinders and prevents the disputers from wandering away from the precise point of enquiry.

It is this trifling humour or dishonest artifice of changing the question, and wandering away from the first point of debate, which gives endless length to disputes, and causes both the disputants to part without any satisfaction. And one chief occasion of it is this; when one of the combatants feels his cause run low and fail, and is just ready to be confuted and demolished, he is tempted to step aside to avoid the blow, and betakes him to a different question: Thus, if his adversary be not well aware of him, he begins to entrench himself in a new fastness, and holds out the siege with a new artillery of thoughts and words. It is the pride of man which is the spring of this evil, and an unwillingness to yield up their own opinions, even to be overcome by truth itself.

VIII. Keep this always therefore upon your mind, as an everlasting rule of conduct in your debates to find out truth, that a resolute design, or even a warm affectation of victory, is the bane of all real improvement, and an effectual bar against the admission of the truth which you profess to seek. This works with a secret, but a powerful and mischievous influence in every dispute, unless we are much upon our guard. It appears in frequent conversation: Every age, every sex, and each party of mankind are so fond of being in the right, that they know not how to renounce this unhappy prejudice, this vain love of victory.

When truth, with bright evidence, is ready to break in upon a disputant, and to overcome his objections and mistakes, how swift and ready is the mind to engage wit and fancy, craft and subtlety, to cloud, and perplex, and puzzle the truth, if possible? How eager is he to throw in some impertinent question to divert from the main subject? How swift to take hold of some occasional word, thereby to lead the discourse off from the point in hand? So much afraid is human nature of parting with its errors, and being overcome by truth. Just thus a hunted hare calls up all the shifts that nature hath taught her, she treads back her mazes, crosses and confounds her former track, and uses all possible methods to divert the scent, when she is in danger of being seized and taken. Let puss practise what nature teaches; but would one imagine that any rational being should take such pains to avoid truth, and to escape the improvement of his understanding?

IX. When you come to a dispute, in order to find out truth, do not presume that you are certainly possessed of it before-hand. Enter the debate with a sincere design of yielding to reason, on which side soever it appears. Use no subtle arts to cloud and entangle the question; hide not yourself in doubtful words and phrases; do not affect

little shifts and subterfuges to avoid the force of an argument; take a generous pleasure to espy the first rising beams of truth, though it be on the side of your opponent. Endeavour to remove the little obscurities that hang about it, and suffer and encourage it to break out into open and convincing light; that while your opponent, perhaps, may gain the better of your reasonings, yet you yourself may triumph over error, and I am sure that is a much more valuable acquisition and victory.

X. Watch narrowly in every dispute, that your opponent does not lead you unwarily to grant some principle or proposition, which will bring with it a fatal consequence, and lead you insensibly into his sentiment, though it be far astray from the truth: And by this wrong step you will be, as it were, plunged into dangerous errors before you are aware. *Polonides*, in free conversation, led *Incauto* to agree with him in this plain proposition, that the blessed God has too much justice in any case to punish* any being who is in itself innocent; till he not only allowed it with an unthinking alacrity, but asserted it in most universal and unguarded terms. A little after, *Polonides* came in discourse to commend the virtues, the innocence, and the piety of our blessed Saviour; and thence inferred, it was impossible that God should ever punish so holy a person, who was never guilty of any crime: Then *Incauto* espied the snare, and found himself robbed and defrauded of the great doctrine of the atonement by the death of Christ, upon which he had placed his immortal hopes according to the gospel. This taught him to bethink himself what a dangerous concession he had made in so universal a manner, that God would never punish any being who was innocent, and he saw it needful to recal his words, or to explain them better, by adding this restriction or limitation, *viz.* "Unless this innocent being were some way involved in another's sin, or stood as a voluntary surety for the guilty:" By this limitation he secured the great and blessed doctrine of the sacrifice of Christ for the sins of men, and learned to be more cautious in his concessions for time to come.

Two months ago, *Fatalio* had almost tempted his friend *Fidens* to leave off prayer, and to abandon his dependence on the providence of God in the common affairs of life, by obtaining of him a concession of the like kind. Is it not evident to reason, says *Fatalio*, that God's immense scheme of transactions in the universe was contrived and determined long before you and I were born? Can you imagine, my dear *Fidens*, that the blessed God changes his original contrivances, and makes new interruptions in the course of them, so often as you and I want his aid, to prevent the little accidents of life, or to guard us from them? Can you suffer yourself to be persuaded that the great Creator of this world takes care to support a bridge which was quite rotten, and to make it stand firm a few minutes longer till you have rode over it? Or will he uphold a falling tower while we two were passing by it, that such worms as you and I are might escape the ruin?

But you say, you prayed for his protection in the morning, and he certainly hears prayer. I grant he knows it: But are you so fond and weak, said he, as to suppose that the universal Lord of all had such a regard to a word or two of your breath, as to make alterations in his own eternal scheme upon that account? Nor is there any other way whereby his providence can preserve you in answer to prayer, but by creating such perpetual interruptions and changes in his own conduct according to your daily behaviour.

* The word "punish," here signifies, "to bring some natural evil upon a person on account of moral evil done."

I acknowledge, says *Fidens*, there is no other way to secure the doctrine of divine providence in all these common affairs; and therefore I begin to doubt, whether God does, or ever will, exert himself so particularly in our little concerns.

Have a care, good *Fidens*, that you yield not too far: Take heed lest you have granted too much to *Fatalio*. Pray let me ask of you, could not the great God, who grasps and surveys all future and distant things in one single view, could not he from the beginning foresee your morning prayer for his protection, and appoint all second causes to concur for the support of that crazy bridge, or to make that old tower stand firm till you had escaped the danger? Or could not he cause all the mediums to work so as to make it fall before you came near it? Can he not appoint all his own transactions in the universe, and every event in the natural world, in a way of perfect correspondence with his own foreknowledge of all the events, actions, and appearances of the moral world in every part of it? Can he not direct every thing in nature, which is but his servant, to act in perfect agreement with his eternal prescience of our sins, or of our piety? And hereby all the glory of Providence, and our necessary dependence upon it by faith and prayer, are as well secured, as if he interposed to alter his own scheme every moment.

Let me ask again: Did not he in his own counsels or decrees appoint thunders and lightnings, and earthquakes, to burn up and destroy Sodom and Gomorrah, and turn them into a dead sea, just at the time when the iniquities of those cities were raised to their supreme height? Did he not ordain the fountains of the deep to be broken up, and overwhelming rains to fall down from heaven, just when a guilty world deserved to be drowned; while he took care of the security of righteous Noah, by an ark which should float upon that very deluge of waters? Thus, he can punish the criminal when he pleases, and reward the devout worshipper in the proper season, by his original and eternal schemes of appointment, as well as if he interposed every moment anew. Take heed, *Fidens*, that you be not tempted away by such sophisms of *Fatalio*, to withhold prayer from God, and to renounce your faith in his providence.

Remember this short and plain caution of the subtle errors of men. Let a snake but once thrust in his head at some small unguarded fold of your garment, and he will insensibly and unavoidably wind his whole body into your bosom, and give you a pernicious wound.

XI. On the other hand, when you have found your opponent make any such concession as may turn to your real advantage in maintaining the truth, be wise and watchful to observe it, and make a happy improvement of it. *Rhapsodus* has taken a great deal of pains to detract from the honour of Christianity, by sly insinuations that the sacred writers are perpetually promoting virtue and piety by promises and threatnings; whereas, neither the fear of future punishment, nor the hope of future reward, can possibly be called good affections, or such as are the acknowledged springs and sources of all actions truly good. He adds further, that this fear, or this hope, cannot consist in reality with virtue or goodness, if it either stands as essential to any moral performance, or as a considerable motive to any good action; and thus he would fain lead Christians to be ashamed of the gospel of Christ, because of its future and eternal promises and threatnings, as being inconsistent with his notion of virtue; for he supposes virtue should be so beloved and practised for the sake of its own beauty and loveliness, that all other motives

arising from rewards or punishments, fear or hope, do really take away just so much from the very nature of virtue as their influence reaches to; and no part of those good practices are really valuable, but what arises from the mere love of virtue itself, without any regard to punishment or reward.

But observe, in two pages afterwards, he grants that this principle of fear of future punishment, and hope of future reward, how mercenary and servile soever it may be accounted, is yet in many circumstances a great advantage, security, and support to virtue; especially where there is danger of the violence of rage or lust, or any counter-working passion, to control and overcome the good affections of the mind.

Now the rule and practice of Christianity, or the gospel, as it is closely connected with future rewards and punishments, may be well supported by this concession. Pray, *Rhapsodus*, tell me, if every man in this present life, by the violence of some counter-working passion, may not have his good affections to virtue controlled or overcome? May not therefore his eternal fears and hopes be a great advantage, security, and support to virtue in so dangerous a state and situation, as our journey through this world towards a better? And this is all that the defence of Christianity necessarily requires.

And yet further, let me ask our rhapsodist, if you have nothing else, Sir, but the beauty and excellency, and loveliness of virtue to preach and flourish upon before such sorry and degenerate creatures as the bulk of mankind are, and you have no future rewards or punishments with which to address their hopes and fears, how many of these vicious wretches will you ever reclaim from all their varieties of profaneness, intemperance, and madness? How many have you ever actually reclaimed by this smooth soft method, and these fine words? What have all that reasoning and rhetoric done which have been displayed by your predecessors the heathen moralists, upon this excellency and beauty of virtue? What has it been able to do towards the reforming of a sinful world? Perhaps now and then a man of better natural mould has been a little refined, and perhaps also there may have been here and there a man restrained or recovered from injustice and knavery, from drunkenness and lewdness, and vile debaucheries, by this fair reasoning and philosophy: But have the passions of revenge and envy, of ambition and pride, and the inward secret vices of the mind, been mortified merely by this philosophical language? Have any of these men been made new creatures, men of real piety and love to God?

Go dress up all the virtues of human nature in all the beauties of your oratory, and declaim aloud on the praise of social virtue, and the amiable qualities of goodness, till your heart or your lungs ache, among the looser herds of mankind, and you will ever find, as your heathen fathers have done before you, that the wild passions and appetites of men are too violent to be restrained by such mild and silken language. You may as well build up a fence of straw and feathers to resist a cannon-ball, or try to quench a flaming grenado with a shell of fair water, as hope to succeed in these attempts. But an eternal heaven and an eternal hell carry divine force and power with them: This doctrine from the mouth of Christian preachers has begun the reformation of multitudes: This gospel has recovered thousands among the nations from iniquity and death. They have been awakened by these awful scenes to begin religion, and afterwards their virtue has improved itself into superior and more refined principles and habits by divine grace, and risen to high and eminent degrees, though not to a consummate state. The

blessed God knows human nature much better than *Rhapsodus* doth, and has throughout his word appointed a more proper and more effectual method of address to it by the passions of hope and fear, by punishments and rewards.

If you read on four pages further in these writings, you will find the author makes another concession. He allows that the master of a family using proper rewards and gentle punishments towards his children, teaches them goodness, and by this help instructs them in a virtue which afterwards they practise upon other grounds, and without thinking of a penalty or a bribe: And this, says he, is what we call a liberal education and a liberal service.

This new concession of that author may also be very happily improved in favour of Christianity. What are the best of men in this life? They are by no means perfect in virtue; we are all but children here under the great Master of the family, and he is pleased, by hopes and fears, by mercies and corrections, to instruct us in virtue, and to conduct us onward towards the sublimer and more perfect practice of it in the future world, where it shall be performed, in his own language, perhaps without thinking of penalties and bribes. And since he hath allowed that this conduct may be called a liberal education, and a liberal service, let Christianity then be indulged the title of a liberal education also, and it is admirably fitted for such frail and sinful creatures, while they are training up towards the sublimer virtues of the heavenly state.

XII. When you are engaged in a dispute with a person of very different principles from yourself, and you cannot find any ready way to prevail with him to embrace the truth by principles which you both freely acknowledge, you may fairly make use of his own principles to shew him his mistake, and thus convince or silence him from his own concessions.

If your opponent should be a Stoic philosopher, or a Jew, you may pursue your argument in defence of some Christian doctrine or duty against such a disputant, by axioms or laws borrowed either from Zeno or Moses. And though you do not enter into the enquiry how many of the laws of Moses are abrogated, or whether Zeno was right or wrong in his philosophy; yet if from the principles and concession of your opponent, you can support your argument for the gospel of Christ, this has been always counted a fair treatment of an adversary, and it is called *Argumentum ad hominem*, or *Ratio ex concessis*. St. Paul sometimes makes use of this sort of disputation, when he talks with Jews or heathen philosophers; and at least he silences if not convinces them: Which is sometimes necessary to be done against an obstinate and clamorous adversary, that just honour might be paid to truths which he knew were divine, and that the only true doctrine of salvation might be confirmed and propagated among sinful and dying men.

XIII. Yet great care must be taken lest your debates break in upon your passions, and awaken them to take part in the controversy. When the opponent pushes hard, and gives just and mortal wounds to our own opinion, our passions are very apt to feel the strokes, and to rise in resentment and defence. Self is so mingled with the sentiments which we have chosen, and has such a tender feeling of all the opposition which is made to them, that personal brawls are very ready to come in as seconds, to succeed and finish the dispute of opinions. Then noise, and clamour, and folly appear in all their shapes, and chase reason and truth out of sight.

How unhappy is the case of frail and wretched mankind, in this dark or dusky state

of strong passion and glimmering reason? How ready are we, when our passions are engaged in the dispute, to consider more what loads of nonsense and reproach we can lay upon our opponent, than what reason and truth require in the controversy itself. Dismal are the consequences mankind are too often involved in by this evil principle; it is this common and dangerous practice, that carries the heart aside from all that is fair and honest in our search after truth, or the propagation of it in the world. One would wish from one's very soul, that none of the Christian fathers had been guilty of such follies as these.

But St. Jerome fairly confesses this evil principle, in his apology for himself to Pammachius, that he had not so much regarded what was exactly to be spoken in the controversy he had in hand, as what was fit to lay a load on Jovinian. And indeed, I fear this was the vile custom of many of the writers even in the church affairs of those times. But it will be double scandal upon us in our more enlightened age, if we will allow ourselves in a conduct so criminal and dishonest. Happy souls, who keep such a sacred dominion over their inferior and animal powers, and all the influences of pride and secular interest, that the sensitive tumults, or these vicious influences, never rise to disturb the superior and better operations of the reasoning mind!

XIV. These general directions are necessary, or at least useful in all debates whatsoever, whether they arise in occasional conversation, or are appointed at any certain time or place; whether they are managed with or without any formal rules to govern them. But there are three sorts of disputation, in which there are some forms and orders observed, and which are distinguished by these three names, *viz.* Socratic, Forensic, and Academic, that is, the disputes of the schools.

Concerning each of these it may not be improper to discourse a little, and give a few particular directions or remarks about them.

CHAPTER XI.

THE SOCRATICAL WAY OF DISPUTATION.

I. THIS method of dispute derives its name from Socrates, by whom it was practised, and by other philosophers in his age, long before Aristotle invented the particular forms of syllogism in mood and figure, which are now used in scholastic disputations.

II. The Socratical way is managed by questions and answers in such a manner as this, *viz.* If I would lead a person into the belief of a heaven and a hell, or a future state of rewards and punishments, I might begin in some such manner of inquiry, and suppose the most obvious and easy answers.

Q. Does not God govern the world?

A. Surely he that made it governs it.

Q. Is not God both a good and a righteous governor?

A. Both these characters, doubtless, belong to him.

Q. What is the true notion of a good and righteous governor?

A. That he punishes the wicked, and rewards the good.

Q. Are the good always rewarded in this life?

A. No surely, for many virtuous men are miserable here, and greatly afflicted.

Q. Are the wicked always punished in this life?

A. No certainly, for many of them live without sorrow, and some of the vilest of men are often raised to great riches and honour.

Q. Wherein then doth God make it appear that he is good and righteous?

A. I own there is but little appearance of it on earth.

Q. Will there not be a time then, when the tables shall be turned, and the scene of things changed, since God governs mankind righteously?

A. Doubtless there must be a proper time, wherein God will make that goodness and that righteousness to appear.

Q. If this be not before their death, how can it be done?

A. I can think of no other way, but by supposing man to have some existence after this life.

Q. Are you not convinced then, that there must be a state of reward and punishment after death?

A. Yes surely, I now see plainly that the goodness and righteousness of God, as governor of the world, necessarily require it.

III. Now the advantages of this method are very considerable.

1. It represents the form of a dialogue or common conversation, which is a much more easy, more pleasant, and a more sprightly way of instruction, and more fit to excite the attention and sharpen the penetration of the learner, than solitary reading or silent attention to a lecture. Man being a sociable creature, delights more in conversation, and learns better this way, if it could always be wisely and happily practised.

2. This method hath something very obliging in it, and carries a very humble and condescending air, when he that instructs seems to be the enquirer, and seeks information from him who learns.

3. It leads the learner into the knowledge of truth, as it were, by his own invention, which is a very pleasing thing to human nature; and by questions pertinently and artificially proposed, it does as effectually draw him on to discover his own mistakes, which he is much more easily persuaded to relinquish when he seems to have discovered them himself.

4. It is managed, in a great measure, in the form of the most easy reasoning, always arising from something asserted or known in the foregoing answer, and so proceeding to enquire something unknown in the following question, which again makes way for the next answer. Now such an exercise is very alluring and entertaining to the understanding, while its own reasoning powers are all along employed, and that without labour or difficulty, because the querist finds out and proposes all the intermediate ideas or middle terms.

IV. There is a method very near akin to this, which has much obtained of late, *viz.* writing controversies by questions only, or confirming or refuting any position, or persuading to or dehorting from any practice, by the mere proposal of queries. The answer to them is supposed to be so plain and so necessary, that they are not expressed, because the query itself carries a convincing argument in it, and seems to determine what the answer must be.

V. If Christian catechisms could be framed in the manner of a Socratical dispute, by question and answer, it would wonderfully enlighten the minds of children, and it would improve their intellectual and reasoning powers, at the same time that it leads

them into the knowledge of religion: And it is upon one account well suited to the capacity of children; for the questions may be pretty numerous, and the querist must not proceed too swiftly towards the determination of his point proposed, that he may with more ease, with brighter evidence, and with surer success, draw the learner on to assent to those principles step by step, from whence the final conclusion will naturally arise. The only inconvenience would be this, that if children were to reason out all their way entirely into the knowledge of every part of their religion, it would draw out common catechisms into too large a volume for their leisure, attention, or memory. Yet those who explain their catechisms to them may, by due application and forethought, instruct them in this manner.

CHAPTER XII.

OF FORENSIC DISPUTES.

I. THE Forum was a public place in Rome, where lawyers and orators made their speeches before the proper judge in matters of property, or in criminal cases, to accuse or excuse, to complain or defend: Thence all sorts of disputations in public assemblies or courts of justice, where several persons make their distinct speeches for or against any person or thing whatsoever, but more especially in civil matters, may come under the name of forensic disputes.

II. This is practised not only in the courts of judicature, where a single person sits to judge of the truth or goodness of any cause, and to determine according to the weight of reasons on either side; but it is used also in political senates or parliaments, in ecclesiastical synods, and assemblies of various kinds.

In these assemblies, generally, one person is chosen chairman or moderator, not to give a determination to the controversy, but chiefly to keep the several speakers to the rules of order and decency in their conduct; but the final determination of the question arises from the majority of opinions or votes in the assembly, according as they are, or ought to be, swayed by the superior weight of reason appearing in the several speeches that are made.

III. The method of proceeding is usually in some such form as this: This first person who speaks when the court is set, opens the case either more briefly or at large, and proposes the case to the judge or the chairman or moderator of the assembly, and gives his own reasons for his opinion in the case proposed.

IV. This person is succeeded by one, or perhaps two or several more, who paraphrase on the same subject, and argue on the same side of the question; they confirm what the first has spoken, and urge new reasons to enforce the same; then those who are of a different opinion, stand up and make their several speeches in a succession, opposing the cause which others have maintained, giving their reasons against it, and endeavouring to refute the arguments whereby the first speakers have supported it.

V. After this, one and another rises up to make their replies, to vindicate or to condemn, to establish or to confute, what has been offered before on each side of the question; till at last, according to the rules, orders, and customs of the court or assembly, the controversy is decided, either by a single judge or the suffrage of the assembly.

VI. Where the question or matter in debate consists of several parts, after it is once opened by the first or second speaker, sometimes those who follow take each of them a particular part of the debate, according to their inclination or their prior agreement, and apply themselves to argue upon that single point only, that so the whole complexion of the debate may not be thrown into confusion by the variety of subjects, if every speaker should handle all the subjects of debate.

VII. Before the final sentence or determination is given, it is usual to have the reasons and arguments which have been offered on both sides, summed up and represented in a more compendious manner: And this is done either by the appointed judge of the court, or the chairman, or some noted person in the assembly, that so judgment may proceed upon the fullest survey of the whole subject, that as far as possible in human affairs nothing may be done contrary to truth or justice.

VIII. As this is a practice in which multitudes of gentlemen, besides those of the learned professions, may be engaged at least in their maturer years of life, so it would be a very proper and useful thing to introduce this custom into our academies, *viz.* to propose cases, and let the students debate them in a forensic manner in the presence of their tutors. There was something of this kind practised by the Roman youth in their schools, in order to train them up for orators, both in the forum and in the senate. Perhaps Juvenal gives some hints of it when he says,

> ——————————*et nos*
> *Consilium dedimus Syllæ, privatus ut altum*
> *Dormiret*—————————— SAT. 1.
>
> Where with men-boys I strove to get renown,
> Advising Sylla to a private gown,
> That he might sleep the sounder.

Sometimes these were assigned to the boys as single subjects of a theme or declamation; so the same poet speaks sarcastically to Hannibal,

> ——*I demens, et sævas curre per Alpes,*
> *Ut pueris placeas et declamatio fias.* SAT. 10.
>
> Go climb the rugged Alps, ambitious fool,
> To please the boys, and be a theme at school.

See more of this matter in Kennet's *Antiquities of Rome*, in the second Essay, *on the Roman Education.*

CHAPTER XIII.

OF ACADEMIC OR SCHOLASTIC DISPUTATION.

THE common methods in which disputes are managed in the Schools of Learning are these, *viz.*

I. The tutor appoints a question in some of the sciences to be debated among his students: One of them undertakes to affirm or to deny the question, and to defend his

assertion or negation, and to answer all objections against it; he is called the respondent: And the rest of the students in the same class, or who pursue the same science, are the opponents, who are appointed to dispute or raise objections against the proposition thus affirmed or denied.

II. Each of the students successively in their turn becomes the respondent or the defender of that proposition, while the rest oppose it also successively in their turns.

III. It is the business of the respondent to write a thesis in Latin, or short discourse on the question proposed; and he either affirms or denies the question according to the opinion of the tutor, which is supposed to be the truth, and he reads it at the beginning of the dispute.

IV. In his discourse, which is written with as great accuracy as the youth is capable of, he explains the terms of the question, frees them from all ambiguity, fixes their sense, declares the true intent and meaning of the question itself, separates it from other questions with which it may have been complicated, and distinguishes it from other questions which may happen to be akin to it, and then pronounces in the negative or affirmative concerning it.

V. When this is done, then in the second part of his discourse he gives his own strongest arguments to confirm the proposition he has laid down, that is, to vindicate his own side of the question: But he does not usually proceed to represent the objections against it, and to solve or answer them; for it is the business of the other students to raise objections in disputing.

VI. *Note*, In some schools, the respondent is admitted to talk largely upon the question with many flourishes and illustrations, to introduce great authorities from ancient and modern writings for the support of it, and to scatter Latin reproaches in abundance on all those who are of a different sentiment. But this is not always permitted, nor should it indeed be ever indulged, lest it teach youth to reproach instead of reasoning.

VII. When the respondent has read over his thesis in the school, the junior student makes an objection, and draws it up in the regular form of a syllogism: The respondent repeats the objection, and either denies the major or minor proposition directly, or he distinguishes upon some word or phrase in the major or minor, and shews in what sense the proposition may be true, but that *that* sense does not affect the question; and then declares that in the sense which affects the present question the proposition is not true, and consequently he denies it.

VIII. Then the opponent proceeds by another syllogism to vindicate the proposition that is denied: Again the respondent answers by denying or distinguishing.

Thus the disputation goes on in a series or succession of syllogisms and answers, till the objector is silenced, and has no more to say.

IX. When he can go no further, the next student begins to propose his objection, and then the third and the fourth, even to the senior, who is the last opponent.

X. During this time, the tutor sits in the chair as president or moderator, to see that the rules of disputation and decency be observed on both sides; and to admonish each disputant of any irregularity in their conduct. His work is also to illustrate and explain the answer or distinction of the respondent where it is obscure, to strengthen it where it is weak, and to correct it where it is false: And when the respondent is pinched with a strong objection, and is at a loss for an answer, the moderator assists

him, and suggests some answer to the objection of the opponent, in defence of the question, according to his own opinion or sentiment.

XI. In public disputes, where the opponents and respondents choose their own side of the question, the moderator's work is not to favour either disputant; but he only sits as president, to see that the laws of disputation be observed, and a decorum maintained.

XII. Now the laws of disputation relate either to the opponent, or to the respondent, or to both.

The laws obliging the opponent are these:

1. That he must directly contradict the proposition of the respondent, and not merely attack any of the arguments whereby the respondent has supported that proposition: For it is one thing to confute a single argument of the respondent, and another to confute the thesis itself.

2. Which is akin to the former, he must contradict or oppose the very sense and intention of the proposition as the respondent has stated it, and not merely oppose the words of the thesis in any other sense; for this would be the way to plunge the dispute into ambiguity and darkness to talk beside the question, to wrangle about words, and to attack a proposition different from what the respondent has espoused, which is called *Ignoratio elenchi.*

3. He must propose his argument in a plain, short, and syllogistic form, according to the rules of logick, without flying to fallacies or sophisms; and, as far as may be, he should use categorical syllogisms.

4. Though the respondent may be attacked either upon a point of his own concession, which is called *Argumentum ex concessis*, or by reducing him to an absurdity, which is called *Reductio ad absurdum*, yet it is the neatest, the most useful, and the best sort of disputation, where the opponent draws his objections from the nature of the question itself.

5. Where the respondent denies any proposition, the opponent, if he proceed, must directly vindicate and confirm that proposition, that is, he must make that proposition the conclusion of his next syllogism.

6. Where the respondent limits or distinguishes any proposition, the opponent must directly prove his own proposition in that sense, and according to that member of the distinction in which the respondent denied it.

XIII. The laws that oblige the respondent are these:

1. To repeat the argument of the opponent in the very same words in which it was proposed, before he attempts to answer it.

2. If the syllogism be false in the logical form of it, he must discover the fault according to the rules of logick.

3. If the argument does not directly and effectually oppose his thesis, he must show this mistake, and make it appear that his thesis is safe, even though the argument of the opponent be admitted: Or at least, that the argument does only aim at it collaterally, or at a distance, and not directly overthrow it, or conclude against it.

4. Where the matter of the opponent's objection is faulty in any part of it, the respondent must grant what is true in it, he must deny what is false, he must distinguish or limit the proposition which is ambiguous or doubtful; and then, granting the sense in which it is true, he must deny the sense in which it is false.

5. If an hypothetic proposition be false, the respondent must deny the consequence: If a disjunctive, he must deny the disjunction: If a categoric or relative, he must simply deny it.

6. It is sometimes allowed for the respondent to use an indirect answer after he has answered directly: And he may also shew how the opponent's argument may be retorted against himself.

XIV. The laws that oblige both disputants, are these:

1. Sometimes it is necessary there should be a mention of certain general principles, in which they both agree, relating to the question, that so they may not dispute on those things which either are or ought to have been first granted on both sides.

2. When the state of the controversy is well known, and plainly determined and agreed, it must not be altered by either disputant in the course of the disputation; and the respondent especially should keep a watchful eye on the opponent in this matter.

3. Let neither party invade the province of the other; especially let the respondent take heed that he does not turn opponent; except in retorting the argument upon his adversary, after a direct response; and even this is allowed only as an illustration or confirmation of his own response.

4. Let each wait with patience till the other has done speaking. It is a piece of rudeness to interrupt another in his speech.

Yet though the disputants have not this liberty, the moderator may do it, when either of the disputants breaks the rules, and he may interpose so far as to keep them to order.

XV. It must be confessed there are some advantages to be attained by academical disputation. It gives vigour and briskness to the mind thus exercised, and relieves the languor of private study and meditation. It sharpens the wit and all the inventive powers. It makes the thoughts active, and sends them on all sides to find arguments and answers both for opposition and defence. It gives opportunity of viewing the subject of discourse on all sides, and of learning what inconveniencies, difficulties, and objections, attend particular opinions. It furnishes the soul with various occasions of starting such thoughts as otherwise would never have come into the mind. It makes a student more expert in attacking and refuting an error, as well as in vindicating a truth. It instructs the scholar in the various methods of warding off the force of objections, and of discovering and repelling the subtle tricks of sophisters. It procures also a freedom and readiness of speech, and raises the modest and diffident genius to a due degree of courage.

XVI. But there are some very grievous inconveniencies that may sometimes overbalance all these advantages. For many young students, by a constant habit of disputing, grow impudent and audacious, proud and disdainful, talkative and impertinent, and render themselves intolerable by an obstinate humour of maintaining whatever they have asserted, as well as by a spirit of contradiction, opposing almost every thing that they hear. The disputation itself often awakens the passions of ambition, emulation, and anger: It carries away the mind from that calm and sedate temper which is so necessary to contemplate truth.

XVII. It is evident also, that by frequent exercises of this sort, wherein opinions true and false are argued, supported and refuted, on both sides, the mind of man is led by insensible degrees to an uncertain and fluctuating temper, and falls into danger of a sceptical humour, which never comes to an establishment in any doctrines. Many

persons by this means become much more ready to oppose whatsoever is offered in searching out truth; they hardly wait till they have read or heard the sentiment of any person, before their heads are busily employed to seek out arguments against it. They grow naturally sharp in finding out difficulties; and by indulging this humour, they converse with the dark and doubtful parts of a subject so long, till they almost render themselves incapable of receiving the full evidence of a proposition, and acknowledging the light of truth. It has some tendency to make a youth a carping critic, rather than a judicious man.

XVIII. I would add yet further, that in these disputations the respondent is generally appointed to maintain the supposed truth, that is, the tutor's opinion. But all the opponents are busy and warmly engaged in finding arguments against the truth. Now if a sprightly young genius happens to manage his argument so well as to puzzle and gravel the respondent, and perhaps to perplex the moderator a little too, he is soon tempted to suppose his argument unanswerable, and the truth entirely to lie on his side. The pleasure which he takes in having found a sophism which has great appearance of reason, and which he himself has managed with such success, becomes perhaps a strong prejudice to engage his inward sentiments in favour of his argument, and in opposition to the supposed truth.

XIX. Yet perhaps it may be possible to reduce scholastic disputations under such a guard, as may in some measure prevent most of these abuses of them, and the unhappy events that too often attend them: For it is pity that an exercise which has some valuable benefits attending it, should be utterly thrown away, if it be possible to secure young minds against the abuse of it; for which purpose some of these directions may seem proper.

XX. General directions for scholastic disputes:

1. Never dispute upon mere trifles, things that are utterly useless to be known, under a vain pretence of sharpening the wit: For the same advantage may be derived from solid and useful subjects, and thus two happy ends may be attained at once. Or if such disputations are always thought dangerous in important matters, let them be utterly abandoned.

2. Do not make infinite and unsearchable things the matter of dispute, nor such propositions as are made up of mere words without ideas, lest it lead young persons into a most unhappy habit of talking without a meaning, and boldly determine upon things that are hardly within the reach of human capacity.

3. Let not obvious and known truths, or some of the most plain and certain propositions be bandied about in a disputation, for a mere trial of skill: For he that opposes them in this manner will be in danger of contracting a habit of opposing all evidence, will acquire a spirit of contradiction, and pride himself in a power of resisting the brightest light, and fighting against the strongest proofs: This will insensibly injure the mind, and tends greatly to an universal scepticism.

Upon the whole, therefore, the most proper subjects of dispute seem to be those questions which are not of the very highest importance and certainty, nor of the meanest and trifling kind: But rather the intermediate questions between these two; and there is a large sufficiency of them in the sciences. But this I put as a mere proposal, to be determined by the more learned and prudent.

4. It would be well if every dispute could be so ordered, as to be a means of searching out truth, and not to gain a triumph. Then each disputant might come to the work without bias and prejudice, with a desire of truth, and not with ambition of glory and victory.

Nor should the aim and design of the respondent be to avoid artfully and escape the difficulties which the opponent offers, but to discuss them thoroughly, and solve them fairly, if they are capable of being solved.

Again, let the opponent be solicitous not to darken and confound the responses that are given him, by fresh subtleties; but let him bethink himself whether they are not a just answer to the objection, and be honestly ready to perceive and accept them, and yield to them.

5. For this end, let both the respondent and opponent use the clearest and most distinct and expressive language in which they can clothe their thoughts. Let them seek and practise brevity and perspicuity on both sides, without long declamations, tedious circumlocutions, and rhetorical flourishes.

If there happen to be any doubt or obscurity on either side, let neither the one nor the other ever refuse to give a fair explication of the words they use.

6. They should not indulge ridicule, either of persons or things, in their disputations. They should abstain from all banter and jest, laughter and merriment. These are things that break in upon that philosophical gravity, sedateness, and serenity of temper, which ought to be observed in every search after truth. However, an argument on some subjects may be sometimes clothed with a little pleasantry, yet a jest or witticism should never be used instead of an argument, nor should it ever be suffered to pass for a real and solid proof.

But especially if the subject be sacred or divine, and have nothing in it comical or ridiculous, all ludicrous turns and jocose or comical airs should be entirely excluded, lest young minds become tinctured with a silly and profane sort of ridicule, and learn to jest and trifle with the awful solemnities of religion.

7. Nor should sarcasm and reproach, or insolent language, ever be used among fair disputants. Turn not off from things to speak of persons. Leave all noisy contests, all immodest clamours, brawling language, and especially all personal scandal and scurrility, to the meanest part of the vulgar world. Let your manner be all candour and gentleness, patient and ready to hear, humbly zealous to inform and be informed: You should be free and pleasant in every answer and behaviour, rather like well-bred gentlemen in polite conversation, than like noisy and contentious wranglers.

8. If the opponent sees victory to incline to his side, let him be content to shew the force of his argument to the intelligent part of the company, without too importunate and petulant demands of an answer, and without insulting over his antagonist, or putting the modesty of the respondent to the blush. Nor let the respondent triumph over the opponent, when he is silent and replies no more. On which side soever victory declares herself, let neither of them manage with such unpleasing and insolent airs, as to awaken those evil passions of pride, anger, shame, or resentment, on either side, which alienate the mind from truth, render it obstinate in the defence of an error, and never suffer it to part with any of its old opinions.

In short, when truth evidently appears on either side, let them learn to yield to con-

viction. When either party is at a nonplus, let them confess the difficulty, and desire present assistance or further time and retirement to consider of the matter, and not rack their present invention to find out little shifts to avoid the force and evidence of truth.

9. Might it not be a safer practice, in order to attain the best ends of disputation, and to avoid some of the ill effects of it, if the opponents were sometimes engaged on the side of truth, and produced their arguments in opposition to error? And what if the respondent was appointed to support the error, and defend it as well as he could, till he was forced to yield, at least to those arguments of the opponents which appear to be really just and strong and unanswerable?

In this practice, the thesis of the respondent should only be a fair stating of the question, with some of the chief objections against the truth proposed and solved.

Perhaps this practice might not so easily be perverted and abused to raise a cavilling, disputative, and sceptical temper in the minds of youth.

I confess in this method which I now propose, there would be one among the students, *viz.* the respondent, always engaged in the support of supposed error: But all the rest would be exercising their talents in arguing for the supposed truth: Whereas in the common methods of disputation in the schools, especially where the students are numerous, each single student is perpetually employed to oppose the truth and vindicate error, except once in a long time when it comes to his turn to be respondent.

10. Upon the whole, it seems necessary that these methods of disputation should be learned in the schools, in order to teach students better to defend truth, and to refute error, both in writing and conversation, where the scholastic forms are utterly neglected.

But after all, the advantage which youth may gain by disputations depends much on the tutor or moderator: He should manage with such prudence both in the disputation and at the end of it, as to make all the disputants know the very point of controversy, wherein it consists; he should manifest the fallacy of sophistical objections, and confirm the solid arguments and answers. This might teach the students how to make the art of disputation useful for the searching out the truth and the defence of it, that it may not be learned and practised only as an art of wrangling, which reigned in the schools several hundred years, and divested the growing reason of youth of its best hopes and improvements.

CHAPTER XIV.

OF STUDY, OR MEDITATION.

I. IT has been proved and established in some of the foregoing chapters, that neither our own observations, nor our reading the labours of the learned, nor the attendance on the best lectures of instruction, nor enjoying the brightest conversation, can ever make a man truly knowing and wise, without the labours of his own reason in surveying, examining, and judging concerning all subjects, upon the best evidence he can acquire. A good genius or sagacity of thought, a happy judgment, a capacious memory, and large opportunities of observation and converse, will do much of themselves towards the cultivation of the mind, where they are all well improved: But where, to the advantage of learned lectures, living instructions, and well-chosen books, diligence and study are

superadded, this man has all human aids concurring to raise him to a superior degree of wisdom and knowledge.

Under the preceding heads of discourse, it has been already declared how our own meditation and reflection should examine, cultivate, and improve all other methods and advantages of enriching the understanding. What remains in this chapter is to give some further occasional hints how to employ our own thoughts, what sort of subjects we should meditate on, and in what manner we should regulate our studies, and how we may improve our judgment, so as, in the most effectual and compendious way, to attain such knowledge as may be most useful for every man in his circumstances of life, and particularly for those of the learned professions.

II. The first direction for youth is this, learn betimes to distinguish between words and things. Get clear and plain ideas of the things you are set to study. Do not content yourselves with mere words and names, lest your laboured improvements only amass a heap of unintelligible phrases, and you feed upon husks instead of kernels. This rule is of unknown use in every science.

But the greatest and most common danger is in the sacred science of theology, where settled terms and phrases have been pronounced divine and orthodox, which yet have had no meaning in them. The scholastic divinity would furnish us with numerous instances of this folly: And yet for many ages all truth and all heresy have been determined by such senseless tests, and by words without ideas: Such *Shibboleths* as these have decided the secular fates of men; and bishoprics or burning, mitres or faggots have been the rewards of different persons, according as they pronounced these consecrated syllables, or not pronounced them. To defend them, was all piety and pomp and triumph; to despise them, to doubt or deny them, was torture and death. A thousand thank-offerings are due to that providence which has delivered our age and our nation from these absurd iniquities! O that every specimen and shadow of this madness were banished from our schools and churches in every shape!

III. Let not young students apply themselves to search out deep, dark, and abstruse matters, far above their reach, or spend their labour in any peculiar subjects, for which they have not the advantages of necessary antecedent learning, or books, or observations. Let them not be too hasty to know things above their present powers, nor plunge their enquiries at once into the depths of knowledge, nor begin to study any science in the middle of it; this will confound rather than enlighten the understanding: Such practices may happen to discourage and jade the mind by an attempt above its power, it may balk the understanding, and create an aversion to future diligence, and perhaps by despair may forbid the pursuit of that subject for ever afterwards; as a limb overstrained by lifting a weight above its power, may never recover its former agility and vigour; or if it does, the man may be frighted from ever exerting his strength again.

IV. Nor yet let any student, on the other hand, fright himself at every turn with insurmountable difficulties, nor imagine that the truth is wrapped up in impenetrable darkness. These are formidable spectres, which the understanding raises sometimes to flatter its own laziness. Those things which in a remote and confused view seem very obscure and perplexed, may be approached by gentle and regular steps, and may then unfold and explain themselves at large to the eye. The hardest problems in geometry, and the most intricate schemes or diagrams may be explicated and understood step by step; every great mathematician bears a constant witness to this observation.

V. In learning any new thing, there should be as little as possible first proposed to the mind at once, and that being understood and fully mastered, proceed then to the next adjoining part yet unknown. This is a slow, but safe and sure way to arrive at knowledge. If the mind apply itself at first to easier subjects and things near akin to what is already known, and then advance to the more remote and knotty parts of knowledge by slow degrees, it will be able in this manner to cope with great difficulties, and prevail over them with amazing and happy success.

Mathon happened to dip into the two last chapters of a new book of geometry and mensuration, as soon as he saw it, and was frighted with the complicated diagrams which he found there, about the frustums of cones and pyramids, &c. and some deep demonstrations among conic sections; he shut the book again in despair, and imagined none but a Sir Isaac Newton was ever fit to read it. But his tutor happily persuaded him to begin the first pages about lines and angles; and he found such surprising pleasure in three weeks time in the victories he daily obtained, that at last he became one of the chief geometers of his age.

VI. Engage not the mind in the intense pursuit of too many things at once; especially such as have no relation to one another. This will be ready to distract the understanding, and hinder it from attaining perfection in any one subject of study. Such a practice gives a slight smattering of several sciences without any solid and substantial knowledge of them, and without any real and valuable improvement; and though two or three sorts of study may be usefully carried on at once, to entertain the mind with variety, that it may not be over tired with one sort of thoughts, yet a multitude of subjects will too much distract the attention, and weaken the application of the mind to any one of them.

Where two or three sciences are pursued at the same time, if one of them be dry, abstracted, and unpleasant, as logick, metaphysics, law, languages, let another be more entertaining and agreeable, to secure the mind from weariness and aversion to study. Delight should be intermingled with labour as far as possible, to allure us to bear the fatigue of dry studies the better. Poetry, practical mathematics, history, &c. are generally esteemed entertaining studies, and may be happily used for this purpose. Thus while we relieve a dull and heavy hour by some alluring employments of the mind, our very diversions enrich our understandings, and our pleasure is turned into profit.

VII. In the pursuit of every valuable subject or knowledge, keep the end always in your eye, and be not diverted from it by every pretty trifle you meet with in the way. Some persons have such a wandering genius, that they are ready to pursue every incidental theme or occasional idea, till they have lost sight of their original subject. These are the men who, when they are engaged in conversation, prolong their story by dwelling on every incident, and swell their narrative with long parentheses, till they have lost their first design; like a man who is sent in quest of some great treasure, but he steps aside to gather every flower he finds, or stands still to dig up every shining pebble he meets with in his way, till the treasure is forgotten and never found.

VIII. Exert your care, skill, and diligence about every subject, and every question, in a just proportion to the importance of it, together with the danger and bad consequences of ignorance or error therein. Many excellent advantages flow from this one direction.

1. This rule will teach you to be very careful in gaining some general and fundamental truths, both in philosophy, in religion, and in human life; because they are of the highest moment, and conduct our thoughts with ease into a thousand inferior and particular propositions.

Such is that great principle in natural philosophy, the doctrine of gravitation, or mutual tendency of all bodies toward each other, which Sir Isaac Newton has so well established, and from which he has drawn the solution of a multitude of appearances in the heavenly bodies as well as on earth.

Such is that golden principle of morality, which our blessed Lord has given us, Do that to others, which you should think just and reasonable that others should do to you, which is almost sufficient in itself to solve all cases of conscience which relate to our neighbour. Such are those principles in religion, that a rational creature is accountable to his Maker for all his actions; that the soul of man is immortal; that there is a future state of happiness and of misery depending on our behaviour in the present life, on which all our religious practices are built or supported.

We should be very curious in examining all propositions that pretend to this honour of being general principles: And we should not without just evidence admit into this rank mere matters of common fame, or commonly received opinions; no, nor the general determinations of the learned, or the established articles of any church or nation, &c. for there are many learned presumptions, many synodical and national mistakes, many established falsehoods, as well as many vulgar errors, wherein multitudes of men have followed one another for whole ages almost blindfold. It is of great importance for every man to be careful that these general principles are just and true; for one error may lead us into thousands, which will naturally follow, if once a leading falsehood be admitted.

2. This rule will direct us to be more careful about practical points than mere speculations, since they are commonly of much greater use and consequence: Therefore the speculations of algebra, the doctrine of infinites, and the quadrature of curves in mathematical learning, together with all the train of theorems in natural philosophy, should by no means intrench upon our studies of morality and virtue. Even in the science of divinity itself, the sublimest speculations of it are not of that worth and value, as the rules of duty towards God and towards men.

3. In matters of practice we should be most careful to fix our end right, and wisely determine the scope at which we aim: Because that is to direct us in the choice and use of all the means to attain it. If our end be wrong, all our labour in the means will be vain, or perhaps so much the more pernicious as they are better suited to attain that mistaken end. If mere sensible pleasure or human grandeur or wealth be our chief end, we shall choose means contrary to piety and virtue, and proceed apace toward real misery.

4. This rule will engage our best powers and deepest attention in the affairs of religion, and things that relate to a future world; for those propositions which extend only to the interest of the present life are but of small importance, when compared with those that have influence upon our everlasting concernments.

5. And even in the affairs of religion, if we walk by the conduct of this rule, we shall be much more laborious in our inquiries into the necessary and fundamental articles of faith and practice than the lesser appendices of Christianity. The great doc-

trines of repentance toward God, faith in our Lord Jesus Christ, with love to men, and universal holiness, will employ our best and brightest hours and meditations; while the mint, anise, and cummin, the gestures, and vestures, and fringes of religion, will be regarded no further than they have a plain and evident connection with faith and love, with holiness and peace.

6. This rule will make us solicitous not only to avoid such errors, whose influence will spread wide into the whole scheme of our own knowledge and practice, but such mistakes also whose influence would be yet more extensive and injurious to others, as well as to ourselves; perhaps to many persons or many families, to a whole church, a town, a country, or a kingdom. Upon this account, persons who are called to instruct others, or who are raised to any eminence either in church or state, ought to be careful in settling their principles in matters relating to the civil, the moral, or the religious life; lest a mistake of theirs should diffuse wide mischief, should draw along with it most pernicious consequences, and perhaps extend to following generations.

These are some of the advantages which arise from the eighth rule, *viz.* pursue every enquiry and study in proportion to its real value and importance.

IX. Have a care lest some beloved notion, or some darling science so far prevail over your mind, as to give a sovereign tincture to all your other studies, and discolour all your ideas; like a person in the jaundice, who spreads a yellow scene with his eyes over all the objects which he meets. I have known a man of peculiar skill in music, and much devoted to that science, who found out a great resemblance of the Athanasian doctrine of the Trinity in every single note, and he thought it carried something of argument in it to prove that doctrine. I have read of another, who accommodated the seven days of the first week of creation to seven notes of music, and thus the whole creation became harmonious.

Under this influence, derived from mathematical studies, some have been tempted to cast all their logical, their metaphysical, and their theological and moral learning into the method of mathematicians, and bring every thing relating to those abstracted, or those practical sciences under theorems, problems, postulates, scholiums, corollaries, &c. whereas the matter ought always to direct the method; for all subjects, or matters of thought, cannot be moulded or subdued to one form. Neither the rules for the conduct of the understanding, nor the doctrines nor duties of religion and virtue, can be exhibited naturally in figures and diagrams. Things are to be considered as they are in themselves; their natures are inflexible, and their natural relations unalterable; and therefore, in order to conceive them aright, we must bring our understandings to things, and not pretend to bend and strain things to comport with our fancies and forms.

X. Suffer not any beloved study to prejudice your mind so far in favour of it as to despise all other learning. This is a fault of some little souls who have got a smattering of astronomy, chemistry, metaphysics, history, &c. and for want of a due acquaintance with other sciences, make a scoff at them all in comparison of their favourite science. Their understandings are hereby cooped up in narrow bounds, so that they never look abroad into other provinces of the intellectual world, which are more beautiful perhaps, and more fruitful than their own: If they would search a little into other sciences, they might not only find treasures of new knowledge, but might be furnished

also with rich hints of thought, and glorious assistances to cultivate that very province to which they have confined themselves.

Here I would always give some grains of allowance to the sacred science of theology, which is incomparably superior to all the rest, as it teaches us the knowledge of God, and the way to his eternal favour. This is that noble study which is every man's duty, and every one who can be called a rational creature is capable of it. This is that science which would truly enlarge the minds of men, were it studied with that freedom, that unbiassed love of truth, and that sacred charity, which it teaches; and if it were not made, contrary to its own nature, the occasion of strife, faction, malignity, a narrow spirit, and unreasonable imposition on the mind and practice. Let this therefore stand always chief.

XI. Let every particular study have due and proper time assigned it, and let not a favourite science prevail with you to lay out such hours upon it, as ought to be employed upon the more necessary and more important affairs or studies of your profession. When you have, according to the best of your discretion, and according to the circumstances of your life, fixed proper hours for particular studies, endeavour to keep to those rules; not indeed with a superstitious preciseness, but with some good degrees of a regular constancy. Order and method in a course of study saves much time, and makes large improvements: Such a fixation of certain hours, will have a happy influence to secure you from trifling and wasting away your minutes in impertinence.

XII. Do not apply yourself to any one study at one time longer than the mind is capable of giving a close attention to it without weariness or wandering. Do not over fatigue the spirits at any time, lest the mind be seized with a lassitude, and thereby be tempted to nauseate and grow tired of a particular subject before you have finished it.

XIII. In the beginning of your application to any new subject, be not too uneasy under present difficulties that occur, nor too importunate and impatient for answers and solutions to any questions that arise. Perhaps a little more study, a little further acquaintance with the subject, a little time and experience will solve those difficulties, untie the knot, and make your doubts vanish: Especially if you are under the instruction of a tutor, he can inform you that your enquiries are perhaps too early, and that you have not yet learned those principles upon which the solution of such a difficulty depends.

XIV. Do not expect to arrive at certainty in every subject which you pursue. There are a hundred things wherein we mortals in this dark and imperfect state must be content with probability, where our best light and reasonings will reach no further. We must balance arguments as justly as we can, and where we cannot find weight enough on either side to determine the scale with sovereign force and assurance, we must content ourselves perhaps with a small preponderation. This will give us a probable opinion, and those probabilities are sufficient for the daily determination of a thousand actions in human life, and many times even in matters of religion.

It is admirably well expressed by a late writer " when there is great strength of argument set before us, if we will refuse to do what appears most fit for us, until every little objection is removed, we shall never take one wise resolution as long as we live."

Suppose I had been honestly and long earching what religion I should choose, and yet I could not find that the arguments in defence of Christianity arose to complete certainty, but went only so far as to give me a probable evidence of the truth of it;

though many difficulties still remained, yet I should think myself obliged to receive and practise that religion; for the God of nature and reason has bound us to assent and act according to the best evidence we have, even though it be not absolute and complete; and as he is our supreme Judge, his abounding goodness and equity will approve and acquit the man whose conscience honestly and willingly seeks the best light, and obeys it as far as he can discover it.

But in matters of great importance in religion, let him join all due diligence with earnest and humble prayer for divine aid in his enquiries; such prayer and such diligence as eternal concerns require, and such as he may plead with courage before the Judge of all.

XV. Endeavour to apply every speculative study, as far as possible, to some practical use, that both yourself and others may be the better for it. Enquiries even in natural philosophy should not be mere amusements, and much less in the affairs of religion. Researches into the springs of natural bodies and their motions should lead men to invent happy methods for the ease and convenience of human life; or at least they should be improved to awaken us to admire the wondrous wisdom and contrivance of God our Creator in all the works of nature.

If we pursue mathematical speculations, they will inure us to attend closely to any subject, to seek and gain clear ideas, to distinguish truth from falsehood, to judge justly, and to argue strongly; and these studies do more directly furnish us with all the various rules of those useful arts of life, *viz.* measuring, building, sailing, &c.

Even our very enquiries and disputations about vacuum or space and atoms, about incommensurable quantities, and the infinite divisibility of matter and eternal duration, which seem to be purely speculative, will shew us some good practical lessons, will lead us to see the weakness of our nature, and should teach us humility in arguing upon divine subjects and matters of sacred revelation. This should guard us against rejecting any doctrine which is expressly and evidently revealed, though we cannot fully understand it. It is good sometimes to lose and bewilder ourselves in such studies for this very reason, and to attain this practical advantage, this improvement in true modesty of spirit.

XVI. Though we should always be ready to change our sentiments of things upon just conviction of their falsehood, yet there is not the same necessity of changing our accustomed methods of reading, or study and practice, even though we have not been led at first into the happiest method. Our thoughts may be true, though we may have hit upon an improper order of thinking. Truth does not always depend upon the most convenient method. There may be a certain form and order in which we have long accustomed ourselves to range our ideas and notions, which may be best for us now, though it was not originally best in itself. The inconveniencies of changing may be much greater than the conveniencies we could obtain by a new method.

As, for instance, if a man in his younger days has ranged all his sentiments in theology in the method of Ames's *Medulla Theologiæ*, or Bishop Usher's *Body of Divinity*, it may be much more natural and easy for him to continue to dispose all his further acquirements in the same order, though perhaps neither of these treatises are in themselves written in the most perfect method. So when we have long fixed our cases of shelves in a library, and ranged our books in any particular order, *viz.* according to their languages, or according to their subjects, or according to the alphabetical names

of the authors, &c. we are perfectly well acquainted with the order in which they now stand, and we can find any particular book which we seek, or add a new book which we have purchased, with much greater ease than we do in finer cases of shelves where the books were ranged in any different manner whatsoever; any different position of the volumes would be new, and strange, and troublesome to us, and would not countervail the inconveniencies of a change.

So if a man of forty years old has been taught to hold his pen awkwardly in his youth, and yet writes sufficiently well for all the purposes of his station, it is not worth while to teach him now the most accurate methods of handling that instrument; for this would create him more trouble without equal advantage, and perhaps he might never attain to write better after he has placed all his fingers perfectly right with this new accuracy.

CHAPTER XV.

OF FIXING THE ATTENTION.

A STUDENT should labour by all proper methods to acquire a steady fixation of thought. Attention is a very necessary thing in order to improve our minds. The evidence of truth does not always appear immediately, nor strike the soul at first sight. It is by long attention and inspection that we arrive at evidence, and it is for want of it we judge falsely of many things. We make haste to determine upon a slight and a sudden view; we confirm our guesses which arise from a glance; we pass a judgment while we have but a confused or obscure perception, and thus plunge ourselves into mistakes. This is like a man, who, walking in a mist, or being at a great distance from any visible object, (suppose a tree, a man, a horse, or a church) judges much amiss of the figure, and the situation, and colours of it, and sometimes takes one for the other; whereas if he would but withhold his judgment till he come nearer to it, or stay till clearer light comes, and then would fix his eyes longer upon it, he would secure himself from those mistakes.

Now in order to gain a greater facility of attention we may observe these rules:

I. Get a good liking to the study or knowledge you would pursue. We may observe that there is not much difficulty in confining the mind to contemplate what we have a great desire to know: And especially if they are matters of sense, or ideas which paint themselves upon the fancy. It is but acquiring a hearty good will and resolution to search out and survey the various properties and parts of such objects, and our attention will be engaged if there be any delight or diversion in the study or contemplation of them. Therefore mathematical studies have a strange influence towards fixing the attention of the mind, and giving a steadiness to a wandering disposition, because they deal much in lines, figures, and numbers, which affect and please the sense and imagination. Histories have a strong tendency the same way, for they engage the soul by a variety of sensible occurrences; when it hath begun, it knows not how to leave off: It longs to know the final event, through a natural curiosity that belongs to mankind. Voyages and travels, and accounts of strange countries and strange appearances, will assist in this work. This sort of study detains the mind by the perpetual occurrence

and expectation of something new, and that which may gratefully strike the imagination.

II. Sometimes we may make use of sensible things and corporeal images for the illustration of those notions which are more abstracted and intellectual. Therefore diagrams greatly assist the mind in astronomy and philosophy; and the emblems of virtues and vices may happily teach children, and pleasingly impress those useful moral ideas on young minds, which perhaps might be conveyed to them with much more difficulty by mere moral and abstracted discourses.

I confess, in this practice of representing moral subjects by pictures, we should be cautious lest we so far immerse the mind in corporeal images, as to render it unfit to take in an abstracted and intellectual idea, or cause it to form wrong conceptions of immaterial things. This practice therefore is rather to be used at first in order to get a fixed habit of attention, and in some cases only; but it can never be our constant way and method of pursuing all moral, abstracted, and spiritual themes.

III. Apply yourself to those studies, and read those authors who draw out their subjects in a perpetual chain of connected reasonings, wherein the following parts of the discourse are naturally and easily derived from those which go before. Several of the mathematical sciences, if not all, are happily useful for this purpose. This will render the labour of study delightful to a rational mind, and will fix the powers of the understanding with strong attention to their proper operations by the very pleasure of it. *Labor ipse voluptas,* is a happy proposition wheresoever it can be applied.

IV. Do not choose your constant place of study by the finery of the prospects, or the most various and entertaining scenes of sensible things. Too much light, or a variety of objects which strike the eye or the ear, especially while they are ever in motion or often changing, have a natural and powerful tendency to steal away the mind too often from its steady pursuit of any subject which we contemplate; and thereby the soul gets a habit of silly curiosity and impertinence, of trifling and wandering. *Vagario* thought himself furnished with the best closet for his study among the beauties, gaieties, and diversions of Kensington or Hampton-Court; but after seven years professing to pursue learning, he was a mere novice still.

V. Be not in too much haste to come to the determination of a difficult or important point. Think it worth your waiting to find out truth. Do not give your assent up to either side of a question too soon, merely on this account, that the study of it is long and difficult. Rather be contented with ignorance for a season, and continue in suspense till your attention and meditation and due labour have found out sufficient evidence on one side. Some are so fond to know a great deal at once, and love to talk of things with freedom and boldness before they thoroughly understand them, that they scarcely ever allow themselves attention enough to search the matter through and through.

VI. Have a care of indulging the more sensual passions and appetites of animal nature: They are great enemies to attention. Let not the mind of a student be under the influence of any warm affection to things of sense, when he comes to engage in the search of truth, or the improvement of his understanding. A person under the power of love, or fear, or anger, great pain or deep sorrow, hath so little government of his soul, that he cannot keep it attentive to the proper subject of his meditation. The passions call away the thoughts with incessant importunity towards the object that excited

them; and if we indulge the frequent rise and roving of passions, we shall thereby procure an unsteady and inattentive habit of mind. Yet this one exception must be admitted, *viz.* If we can be so happy as to engage any passion of the soul on the side of the particular study which we are pursuing, it may have a great influence to fix the attention more strongly to it.

VII. It is therefore very useful to fix and engage the mind in the pursuit of any study, by a consideration of the divine pleasures of truth and knowledge, by a sense of our duty to God, by a delight in the exercise of our intellectual faculties, by the hope of future service to our fellow creatures, and glorious advantage to ourselves, both in this world and that which is to come. These thoughts, though they may move our affections, yet they do it with a proper influence: These will rather assist and promote our attention, than disturb or divert it from the subject of our present and proper meditations. A soul inspired with the fondest love of truth, and the warmest aspirations after sincere felicity and celestial beatitude, will keep all its powers attentive to the incessant pursuit of them: Passion is then refined, and consecrated to its divinest purposes.

CHAPTER XVI.

OF ENLARGING THE CAPACITY OF THE MIND.

THERE are three things which in an especial manner go to make up that amplitude or capacity of mind, which is one of the noblest characters belonging to the understanding. 1. When the mind is ready to take in great and sublime ideas without pain or difficulty. 2. When the mind is free to receive new and strange ideas, upon just evidence, without great surprise or aversion. 3. When the mind is able to conceive or survey many ideas at once without confusion, and to form a true judgment derived from that extensive survey. The person who wants either of these characters may in that respect be said to have a narrow genius. Let us diffuse our meditations a little upon this subject.

I. That is an ample and capacious mind which is ready to take in vast and sublime ideas without pain or difficulty. Persons who have never been used to converse with any thing but the common little and obvious affairs of life, have acquired a narrow or contracted habit of soul, that they are not able to stretch their intellects wide enough to admit large and noble thoughts; they are ready to make their domestic daily and familiar images of things the measure of all that is, and all that can be.

Talk to them of the vast dimensions of the planetary worlds; tell them that the star called Jupiter is a solid globe, two hundred and twenty times bigger than our earth; that the sun is a vast globe of fire, above a thousand times bigger than Jupiter; that is, two hundred and twenty thousand times bigger than the earth; that the distance from the earth to the sun is eighty-one millions of miles; and that a cannon bullet shot from the earth would not arrive at the nearest of the fixed stars in some hundreds of years: They cannot bear the belief of it, but hear all these glorious labours of astronomy as a mere idle romance.

Inform them of the amazing swiftness of the motion of some of the smallest or the biggest bodies in nature; assure them, according to the best philosophy, that the

planet Venus, that is, our morning or evening star, which is near as big as our earth, though it seems to move from its place but a few yards in a month, does really fly seventy thousand miles in an hour, tell them that the rays of light shoot from the sun to our earth at the rate of one hundred and eighty thousand miles in the second of a minute, they stand aghast at such sort of talk, and believe it no more than the tales of giants fifty yards high, and the rabbinical fables of leviathan, who every day swallows a fish of three miles long, and is thus preparing himself to be the food and entertainment of the blessed at the feast of Paradise.

These unenlarged souls are in the same manner disgusted with the wonders which the microscope has discovered concerning the shape, the limbs, and motions of ten thousand little animals, whose united bulk would not equal a pepper-corn: They are ready to give the lie to all the improvements of our senses by the invention of a variety of glasses, and will scarcely believe any thing beyond the testimony of their naked eye without the assistance of art.

Now if we would attempt in a learned manner to relieve the minds that labour under this defect,

1. It is useful to begin with some first principles of geometry, and lead them onward by degrees to the doctrine of quantities which are incommensurable, or which will admit of no common measure, though it be never so small. By this means they will see the necessity of admitting the infinite divisibility of quantity or matter.

This same doctrine may also be proved to their understandings, and almost to their senses, by some easier arguments in a more obvious manner. As the very opening and closing of a pair of compasses, will evidently prove that if the smallest supposed part of matter or quantity be put between the points, there will be still less and less distances or quantities all the way between the legs, till you come to the head or joint: Wherefore there is no such thing possible as the smallest quantity. But a little acquaintance with true philosophy and mathematical learning would soon teach them, that there are no limits either as to the extension of space, or to the division of body, and would lead them to believe there are bodies amazingly great or small beyond their present imagination.

2. It is proper also to acquaint them with the circumference of our earth, which may be proved by very easy principles of geometry, geography, and astronomy, to be about twenty-four thousand miles round, as it has been actually found to have this dimension by mariners who have sailed round it. Then let them be taught that in every twenty-four hours, either the sun and stars must all move round this earth, or the earth must turn round upon its own axis. If the earth itself revolve thus, then each house or mountain near the equator must move at the rate of a thousand miles in an hour: But if, as they generally suppose, the sun or stars move round the earth, then, the circumference of their several orbits or spheres being vastly greater than this earth, they must have a motion prodigiously swifter than a thousand miles an hour. Such a thought as this will by degrees enlarge their minds, and they will be taught, even upon their own principle of the diurnal revolution of the heavens, to take in some of the vast dimensions of the heavenly bodies, their spaces and motions.

3. To this should be added the use of telescopes, to help them to see the distant wonders in the skies; and microscopes, which discover the minutest part of little

animals, and reveal some of the finer and most curious work of nature. They should be acquainted also with some other noble inventions of modern philosophy, which have a great influence to enlarge the human understanding, of which I shall take occasion to speak more under the next head.

4. For the same purpose they may be invited to read those parts of Milton's admirable poem, entitled *Paradise Lost*, where he describes the armies and powers of angels, the wars and the senate of devils, the creation of this earth, together with the descriptions of heaven, hell, and Paradise.

It must be granted that poesy often deals in these vast and sublime ideas. And even if the subject or matter of the poem doth not require such amazing and extensive thoughts, yet tropes and figures, which are some of the main powers and beauties of poesy, do so gloriously exalt the matter as to give a sublime imagination its proper relish and delight.

So when a boar is chafed in hunting,

His nostrils flames expire,
And his red eye-balls roll with living fire. DRYDEN.

When Ulysses withholds and suppresses his resentment,

His wrath comprest
Recoiling, mutter'd thunder in his breast. POPE.

But especially where the subject is grand, the poet fails not to represent it in all its grandeur.

So when the supremacy of a God is described,

He sees with equal eye, as God of all,
A hero perish, or a sparrow fall:
Atoms or systems, into ruin hurl'd,
And now a bubble burst, and now a world. POPE.

This sort of writings have a natural tendency to enlarge the capacity of the mind, and make sublime ideas familiar to it. And instead of running always to the ancient heathen poesy, with this design, we may with equal if not superior advantage, apply ourselves to converse with some of the best of our modern poets, as well as with the writings of the prophets, and the poetical parts of the Bible, *viz.* the Book of Job and the Psalms, in which sacred authors we shall find sometimes more sublime ideas, more glorious descriptions, more elevated language, than the fondest critics have ever found in any of the heathen versifiers either of Greece or Rome; for the eastern writers use and allow much stronger figures and tropes than the western.

Now there are many, and great, and sacred advantages to be derived from this sort of enlargement of the mind.

It will lead us into more exalted apprehensions of the great God our Creator than ever we had before. It will entertain our thoughts with holy wonder and amazement, while we contemplate that being who created these various works of surprising greatness, and surprising smallness; who has displayed most inconceivable wisdom in the contrivance of all the parts, powers, and motions of these little animals invisible to the naked eye; who has manifested a most divine extent of knowledge, power, and great-

ness, in forming, moving, and managing the most extensive bulk of the heavenly bodies, and in surveying and comprehending all those unmeasurable spaces in which they move. Fancy, with all her images, is fatigued and overwhelmed in following the planetary worlds through such immense stages, such astonishing journies as these are, and resigns its place to the pure intellect, which learns by degrees to take in such ideas as these, and to adore its Creator with new and sublime devotion.

And not only are we taught to form juster ideas of the great God by these methods, but this enlargement of the mind carries us on to nobler conceptions of his intelligent creatures. The mind that deals only in vulgar and common ideas, is ready to imagine the nature and powers of man to come something too near to God his maker, because we do not see, or sensibly converse with, any beings superior to ourselves. But when the soul has obtained a greater amplitude of thought, it will not then immediately pronounce every thing to be God which is above man. It then learns to suppose there may be as many various ranks of beings in the invisible world in a constant gradation superior to us, as we ourselves are superior to all the ranks of being beneath us in this visible world; even though we descend downward far below the ant and the worm, the snail and the oyster, to the least and to the dullest animated atoms which are discovered to us by microscopes.

By this means we shall be able to suppose what prodigious power angels, whether good or bad, must be furnished with, and prodigious knowledge, in order to oversee the realms of Persia, and Græcia of old, or if any such superintend the affairs of Great Britain, France, Ireland, Germany, &c. in our days: What power and speed is necessary to destroy one hundred and eighty-five thousand armed men, in one night, in the Assyrian camp of Sennacherib, and all the first-born in the land of Egypt in another, both which are attributed to an angel.

By these steps we shall ascend to form more just ideas of the knowledge and grandeur, the power and glory, of the Man Jesus Christ, who is intimately united to God, and is one with him. Doubtless he is furnished with superior powers to all the angels in heaven, because he is employed in superior work, and appointed to be the sovereign Lord of all the visible and invisible worlds. It is his human nature, in which the Godhead dwells bodily, that is advanced to these honours and to this empire; and perhaps there is little or nothing in the government of the kingdoms of nature and grace, but what is transacted by the Man Jesus, inhabited by the divine power and wisdom, and employed as a medium or conscious instrument of this extensive gubernation.

II. I proceed now to consider the next thing wherein the capacity or amplitude of the mind consists, and that is, when the mind is free to receive new and strange ideas and propositions, upon just evidence, without any great surprise or aversion. Those who confine themselves within the circle of their own hereditary ideas and opinions, and who never give themselves leave so much as to examine or believe any thing beside the dictates of their own family or sect, or party, are justly charged with a narrowness of soul. Let us survey some instances of this imperfection, and then direct to the cure of it.

1. Persons who have been bred up all their days within the smoke of their father's chimney, or within the limits of their native town or village, are surprised at every new sight that appears, when they travel a few miles from home. The ploughman stands

amazed at the shops, the trade, the crowds of people, the magnificent buildings, the pomp and riches, and equipage of the court and city, and would hardly believe what was told him before he saw it. On the other hand, the cockney travelling into the country is surprised at many actions of the quadruped and winged animals in the fields, and at many common practices of rural affairs.

If either of these happen to hear an account of the familiar and daily customs of foreign countries, they pronounce them at once indecent and ridiculous; so narrow are their understandings, and their thoughts so confined, that they know not how to believe any thing wise or proper, besides what they have been taught to practise.

This narrowness of mind should be cured by hearing and reading the accounts of different parts of the world, and the histories of past ages, and of nations and countries distant from our own, especially the more polite parts of mankind. Nothing tends in this respect so much to enlarge the mind, as travelling, that is, making a visit to other towns, cities, or countries, besides those in which we were born and educated: And where our condition of life does not grant us this privilege, we must endeavour to supply the want of it by books.

2. It is the same narrowness of mind that awakens the surprise and aversion of some persons, when they hear of doctrines and schemes in human affairs or in religion quite different from what they have embraced. Perhaps they have been trained up from their infancy in one set of notions, and their thoughts have been confined to one single tract both in the civil or religious life, without ever hearing or knowing what other opinions are current among mankind: Or at least they have seen all other notions besides their own represented in a false and malignant light, whereupon they judge and condemn at once every sentiment but what their own party receives, and they think it a piece of justice and truth to lay heavy censures upon the practice of every different sect in Christianity or politics. They have so rooted themselves in the opinions of their party, that they cannot hear an objection with patience, nor can they bear a vindication, or so much as an apology for any set of principles beside their own: All the rest is nonsense or heresy, folly or blasphemy.

This defect also is to be relieved by free conversation with persons of different sentiments; this will teach us to bear with patience a defence of opinions contrary to our own. If we are scholars, we should also read the objections against our own tenets, and view the principles of other parties, as they are represented in their own authors, and not merely in the citations of those who would confute them. We should take an honest and unbiassed survey of the force of reasoning on all sides, and bring all to the test of unprejudiced reason and divine revelation. *Note*, This is not to be done in a rash and self-sufficient manner; but with a humble dependence on divine wisdom and grace while we walk among snares and dangers.

By such a free converse with persons of different sects, especially those who differ only in particular forms of Christianity, but agree in the great and necessary doctrines of it, we shall find that there are persons of good sense and virtue, persons of piety and worth, persons of much candour and goodness, who belong to different parties, and have imbibed sentiments opposite to each other. This will soften the roughness of an unpolished soul, and enlarge the avenues of our charity towards others, and incline us to receive them into all the degrees of unity and affection which the word of God requires.

3. I might borrow further illustrations both of this freedom and this aversion to receive new truths from modern astronomy and natural philosophy. How much is the vulgar part of the world surprised at the talk of the diurnal and annual revolutions of the earth? They have ever been taught by their senses and their neighbours to imagine the earth stands fixed in the centre of the universe, and that the sun, with all the planets and the fixed stars, are whirled round this little globe once in twenty-four hours: Not considering that such a diurnal motion, by reason of the distance of some of those heavenly bodies, must be almost infinitely swifter and more inconceivable than any which the modern astronomers attribute to them. Tell these persons that the sun is fixed in the centre, that the earth, with all the planets, roll round the sun in their several periods, and that the moon rolls round the earth in a lesser circle, while together with the earth she is carried round the sun; they cannot admit a syllable of this new and strange doctrine, and they pronounce it utterly contrary to all sense and reason.

Acquaint them that there are four moons also perpetually rolling round the planet Jupiter, and carried along with him in his periodical circuit round the sun, which little moons were never known till the year 1610, when Galileo discovered them by his telescope; inform them that Saturn has five moons of the same kind attending him, and that the body of that planet is encompassed with a broad flat circular ring, distant from the planet twenty-one thousand miles, and twenty-one thousand miles broad, they look upon these things as tales and fancies, and will tell you that the glasses do but delude your eye with vain images; and even when they themselves consult their own eyesight in the use of these tubes, the narrowness of their mind is such, that they will scarcely believe their senses when they dictate ideas so new and strange.

And if you proceed further, and attempt to lead them into a belief that all these planetary worlds are habitable, and it is probable they are replenished with intellectual beings dwelling in bodies, they will deride the folly of him that informs them; for they resolve to believe there are no habitable worlds but this earth, and no spirits dwelling in bodies besides mankind; and it is well if they do not fix the brand of heresy on the man who is leading them out of their long imprisonment, and loosing the fetters of their souls.

There are many other things relating to mechanical experiments, and to the properties of the air, water, fire, iron, the loadstone, and other minerals and metals, as well as the doctrine of the sensible qualities, *viz.* colours, sounds, tastes, &c. which this rank of men cannot believe for want of a greater amplitude of mind.

The best way to convince them, is by giving them some acquaintance with the various experiments in philosophy, and proving, by ocular demonstration, the multiform and amazing operations of the air-pump, the loadstone, the chemical furnace, optical glasses, and mechanical engines. By this means the understanding will stretch itself by degrees, and when they have found there are so many new and strange things that are most evidently true, they will not be so forward to condemn every new proposition in any of the other sciences, or in the affairs of religion or civil life.

III. The capacity of the understanding includes yet another qualification in it, and that is, an ability to receive many ideas at once without confusion. The ample mind takes a survey of several objects with one glance, keeps them all within sight, and present to the soul, that they may be compared together in their mutual respects; it forms

just judgments, and it draws proper inferences from this comparison even to a great length of argument, and a chain of demonstrations.

The narrowness that belongs to human souls in general, is a great imperfection and impediment to wisdom and happiness. There are but few persons who can contemplate, or practise several things at once; our faculties are very limited, and while we are intent upon one part or property of a subject, we have but a slight glimpse of the rest, or we lose it out of sight. But it is a sign of a large and capacious mind, if we can with one single view take in a variety of objects; or at least when the mind can apply itself to several objects with so swift a succession, and in so few moments, as attains almost the same ends as if it were all done in the same instant.

This is a necessary qualification in order to great knowledge and good judgment: For there are several things in human life, in religion, and in the sciences, which have various circumstances, appendices, and relations, attending them; and without a survey of all those ideas which stand in connection with, and relation to, each other, we are often in danger of passing a false judgment on the subject proposed. It is for this reason there are so numerous controversies found among the learned and unlearned world, in matters of religion as well as in the affairs of civil government. The notions of sin, and duty to God and our fellow-creatures; of law, justice, authority, and power; of covenant, faith, justification, redemption, and grace; of church, bishop, presbyter, ordination, &c. contain in them such complicated ideas, that when we are to judge of any thing concerning them, it is hard to take into our view at once all the attendants or consequents that must and will be concerned in the determination of a single question: And yet without a due attention to many, or most of these, we are in danger of determining that question amiss.

It is owing to the narrowness of our minds, that we are exposed to the same peril in the matters of human duty and prudence. In many things which we do, we ought not only to consider the mere naked action itself, but the persons who act, the persons toward whom, the time when, the place where, the manner how, the end for which the action is done, together with the effects that must or that may follow, and all other surrounding circumstances: These things must necessarily be taken into our view, in order to determine whether the action, which is indifferent in itself, be either lawful or unlawful, good or evil, wise or foolish, decent or indecent, proper or improper, as it is so circumstantiated.

Let me give a plain instance for the illustration of this matter. *Mario* kills a dog, which, considered merely in itself, seems to be an indifferent action: Now the dog was *Timon*'s, and not his own; this makes it look unlawful. But *Timon* bid him do it; this gives it an appearance of lawfulness again. It was done at church, and in time of divine service: These circumstances added, cast on it an air of irreligion. But the dog flew at *Mario*, and put him in danger of his life; this relieves the seeming impiety of the action. Yet *Mario* might have escaped by flying thence; therefore the action appears to be improper. But the dog was known to be mad; this further circumstance makes it almost necessary that the dog should be slain, lest he might worry the assembly, and do much mischief. Yet again, *Mario* killed him with a pistol, which he happened to have in his pocket since yesterday's journey: Now hereby the whole congregation was terrified and discomposed, and divine service was broken off; this carries an appearance

of great indecency and impropriety in it: But after all, when we consider a further circumstance, that *Mario*, being thus violently assaulted by a mad dog, had no way of escape, and had no other weapon about him, it seems to take away all the colours of impropriety, indecency, or unlawfulness, and to allow that the preservation of one or many lives will justify the act as wise and good. Now all these concurrent appendices of the action ought to be surveyed, in order to pronounce with justice and truth concerning it.

There are a multitude of human actions in private life, in domestic affairs, in traffic, in civil government, in courts of justice, in schools of learning, &c. which have so many complicated circumstances, aspects, and situations, with regard to time and place, persons and things, that it is impossible for any one to pass a right judgment concerning them, without entering into most of these circumstances, and surveying them extensively, and comparing and balancing them all aright.

Whence, by the way, I may take occasion to say, how many thousands there are who take upon them to pass their censures on the personal and the domestic actions of others, who pronounce boldly on the affairs of the public, and determine the justice or madness, the wisdom or folly, of national administrations, of peace and war, &c. whom neither God nor men ever qualified for such a post of judgment? They were not capable of entering into the numerous concurring springs of action, nor had they ever taken a survey of the twentieth part of the circumstances which were necessary for such judgments or censures.

It is the narrowness of our minds, as well as the vices of the will, that oftentimes prevents us from taking a full view of all the complicated and concurring appendices that belong to human actions: Thence it comes to pass that there is so little right judgment, so little justice, prudence, or decency, practised among the bulk of mankind; thence arise infinite reproaches and censures, alike foolish and unrighteous. You see therefore how needful and happy a thing it is, to be possessed of some measure of this amplitude of soul, in order to make us very wise, or knowing, or just, or prudent, or happy.

I confess this sort of amplitude or capacity of mind is in a great measure the gift of nature, for some are born with much more capacious souls than others.

The genius of some persons is so poor and limited, that they can hardly take in the connection of two or three propositions, unless it be in matters of sense, and which they have learned by experience; these are utterly unfit for speculative studies: It is hard for them to discern the difference between right and wrong, in matters of reason or any abstracted subjects; these ought never to set up for scholars, but apply themselves to those arts and professions of life which are to be learned at an easier rate, by slow degrees and daily experience.

Others have a soul a little more capacious, and they can take in the connection of a few propositions pretty well; but if the chain of consequences be a little prolix, here they stick and are confounded. If persons of this make ever devote themselves to science, they should be well assured of a solid and strong constitution of body, and well resolved to bear the fatigue of hard labour and diligence in study: If the iron be blunt, king Solomon tells us, we must put more strength.

But, in the third place, there are some of so bright and happy a genius, and so ample a mind, that they can take in a long train of propositions, if not at once, yet in

a very few moments, and judge well concerning the dependence of them. They can survey a variety of complicated ideas without fatigue or disturbance; and a number of truths offering themselves as it were in one view to their understanding, doth not perplex or confound them. This makes a great man.

Now though there may be much owing to nature in this case, yet experience assures us that even a lower degree of this capacity and extent of thought may be increased by diligence and application, by frequent exercise, and the observation of such rules as these:

I. Labour by all means to gain an attentive and patient temper of mind, a power of confining and fixing your thoughts so long on any one appointed subject, till you have surveyed it on every side and in every situation, and run through the several powers, parts, properties, and relations, effects and consequences of it. He whose thoughts are very fluttering and wandering, and cannot be fixed attentively to a few ideas successively, will never be able to survey many and various objects distinctly at once, but will certainly be overwhelmed and confounded with the multiplicity of them. The rules for fixing the attention in the former chapter are proper to be consulted here.

II. Accustom yourself to clear and distinct ideas in every thing you think of. Be not satisfied with obscure and confused conceptions of things, especially where clearer may be obtained: For one obscure or confused idea, especially if it be of great importance in the question, intermingled with many clear ones, and placed in its variety of aspects towards them, will be in danger of spreading confusion over the whole scene of ideas, and thus may have an unhappy influence to overwhelm the understanding with darkness, and pervert the judgment. A little black paint will shamefully tincture and spoil twenty gay colours.

Consider yet further, that if you content yourself frequently with words instead of ideas, or with cloudy and confused notions of things, how impenetrable will that darkness be, and how vast and endless that confusion which must surround and involve the understanding, when many of these obscure and confused ideas come to be set before the soul at once; and how impossible will it be to form a clear and just judgment about them?

III. Use all diligence to acquire and treasure up a large store of ideas and notions: Take every opportunity to add something to your stock; and by frequent recollection fix them in your memory: Nothing tends to confirm and enlarge the memory like a frequent review of its possessions, then the brain being well furnished with various traces, signatures and images, will have a rich treasure always ready to be proposed or offered to the soul, when it directs its thoughts towards any particular subject. This will gradually give the mind a faculty of surveying many objects at once; as a room that is richly adorned and hung round with a great variety of pictures, strikes the eye almost at once with all that variety, especially if they have been well surveyed one by one at first: This makes it habitual and more easy to the inhabitants to take in many of those painted scenes with a single glance or two.

Here *note*, That by acquiring a rich treasure of notions, I do not mean only single ideas, but also propositions, observations, and experiences, with reasonings and arguments upon the various subjects that occur among natural or moral, common or sacred affairs; then when you are called to judge concerning any question, you will have some

principles of truth, some useful axioms and observations always ready at hand to direct and assist your judgment.

IV. It is necessary that we should, as far as possible, entertain and lay up our daily new ideas, in a regular order, and range the acquisitions of our souls under proper heads, whether of divinity, law, physics, mathematics, morality, politics, trade, domestic life, civility, decency, &c. whether of cause, effect, substance, mode, power, property, body, spirit, &c. We should inure our minds to method and order continually; and when we take in any fresh ideas, occurrences and observations, we should dispose of them in their proper places, and see how they stand and agree with the rest of our notions on the same subject: As a scholar would dispose of a new book on a proper shelf among its kindred authors; or as an officer at the post house in London disposes of every letter he takes in, placing it in the box that belongs to the proper road or county.

In any of these cases, if things lay all in a heap, the addition of any new object would increase the confusion; but method gives a speedy and short survey of them with ease and pleasure. Method is of admirable advantage to keep our ideas from a confused mixture, and to preserve them ready for every use. The science of ontology, which distributes all beings, and all the affections of being, whether absolute or relative, under proper classes, is of good service to keep our intellectual acquisitions in such order, as that the mind may survey them at once.

V. As method is necessary for the improvement of the mind, in order to make your treasure of ideas most useful; so in all your further pursuits of truth and acquirment of rational knowledge, observe a regular progressive method. Begin with the most simple, easy and obvious ideas; then by degrees join two, and three, and more of them together, thus the complicated ideas growing up under your eye and observation, will not give the same confusion of thought as they would do if they were all offered to the mind at once, without your observing the original and formation of them. An eminent example of this appears in the study of arithmetic. If a scholar just admitted into the school observes his master performing an operation in the rule of division, his head is at once disturbed and confounded with the manifold comparisons of the numbers of the divisor and dividend, and the multiplication of the one and subtraction of it from the other; but if he begin regularly at addition, and so proceed by subtraction and multiplication, he will then in a few weeks be able to take an intelligent survey of all those operations in division, and to practise them himself with ease and pleasure, each of which at first seemed all intricacy and confusion.

An illustration of the like nature may be borrowed from geometry and algebra, and other mathematical practices: How easily does an expert geometrician with one glance of his eye, take in a complicated diagram made up of many lines and circles, angles and arches? How readily does he judge of it, whether the demonstration designed by it be true or false? It was by degrees he arrived at this stretch of understanding; he began with a single line or a point; he joined two lines in an angle; he advanced to triangles and squares, polygons and circles; thus the powers of his understanding were stretched and augmented daily, till by diligence and regular application he acquired this extensive faculty of mind.

But this advantage does not belong only to mathematical learning. If we apply our-

selves at first in any science to clear and single ideas, and never hurry ourselves on to the following and more complicated parts of knowledge till we thoroughly understand the foregoing, we may practise the same method of enlarging the capacity of the soul with success in any one of the sciences, or in the affairs of life and religion.

Beginning with A, B, C, and making syllables out of letters, and words out of syllables, has been the foundation of all that glorious superstructure of arts and sciences which have enriched the minds and libraries of the learned world in several ages. These are the first steps by which the ample and capacious souls among mankind have arrived at that prodigious extent of knowledge; which renders them the wonder and glory of the nation where they live. Though Plato and Cicero, Descartes and Mr. Boyle, Mr. Locke and Sir Isaac Newton, were doubtless favoured by nature with a genius of uncommon amplitude; yet in their early years and first attempts of science, this was but limited and narrow in comparison of what they attained at last. But how vast and capacious were those powers which they afterwards acquired by patient attention and watchful observation, by the pursuit of clear ideas and regular method of thinking.

VI. Another means of acquiring this amplitude and capacity of mind, is a perusal of difficult entangled questions, and of the solution of them in any science. Speculative and casuistical divinity will furnish us with many such cases and controversies. There are some such difficulties in reconciling several parts of the epistles of St. Paul relating to the jewish law and the Christian gospel; a happy solution whereof will require such an extensive view of things, and the reading of these happy solutions will enlarge this faculty in younger students. In morals and political subjects, Puffendorf's *Law of Nature and Nations*, and several determinations therein, will promote the same amplitude of mind. An attendance on public trials and arguments in the civil courts of justice, will be of good advantage for this purpose, and after a man has studied the general principles of the law of nature, and the laws of England in proper books, the reading the reports of adjudged cases, collected by men of great sagacity and judgment, will richly improve his mind toward acquiring this desirable amplitude and extent of thought, and more especially in persons of that profession.

CHAPTER XVII.

OF IMPROVING THE MEMORY.

MEMORY is a distinct faculty of the mind of man, very different from perception, judgment and reasoning, and its other powers. Then we are said to remember any thing, when the idea of it arises in the mind with a consciousness at the same time that we have had this idea before. Our memory is our natural power of retaining what we learn, and of recalling it on every occasion. Therefore we can never be said to remember any thing, whether it be ideas or propositions, words or things, notions or arguments, of which we have not had some former idea or perception, either by sense or imagination, thought or reflection; but whatsoever we learn from observation, books or conversation, &c. it must all be laid up and preserved in the memory, if we would make it really useful.

So necessary and so excellent a faculty is the memory of man, that all other abilities

of the mind borrow from hence their beauty and perfection: For the other capacities of the soul are almost useless without this. To what purpose are all our labours in knowledge and wisdom, if we want memory to preserve and use what we have acquired? What signify all other intellectual or spiritual improvements, if they are lost as soon as they are obtained? It is memory alone that enriches the mind, by preserving what our labour and industry daily collect. In a word, there can be neither knowledge, nor arts, nor sciences without memory: Nor can there be any improvement of mankind in virtue or morals, or the practice of religion without the assistance and influence of this power. Without memory the soul of man would be but a poor distitute naked being, with an everlasting blank spread over it, except the fleeting ideas of the present moment.

Memory is very useful to those who speak, as well as to those who learn. It assists the teacher and the orator, as well as the scholar or the hearer. The best speeches and instructions are almost lost, if those who hear them immediately forget them. And those who are called to speak in public are much metter heard and accepted, when they can deliver their discourse by the help of a lively genius and a ready memory, than when they are forced to read all that they would communicate to their hearers. Reading is certainly a heavier way of the conveyance of our sentiments; and there are very few mere readers, who have the felicity of penetrating the soul and awakening the passions of those who hear, by such a grace and power of oratory, as the man who seems to talk every word from his very heart, and pours out the riches of his own knowledge upon the people round about him by the help of a free and copious memory. This gives life and spirit to every thing that is spoken, and has a natural tendency to make a deeper impression on the minds of men: It awakens the dullest spirits, causes them to receive a discourse with more affection and pleasure, and adds a singular grace and excellency both to the person and his oration.

A good judgment, and a good memory are very different qualifications. A person may have a very strong, capacious, and retentive memory, where the judgment is very poor and weak; as sometimes it happens in those who are but one degree above an idiot, who have manifested an amazing strength and extent of memory, but have hardly been able to join or disjoin two or three ideas in a wise and happy manner, to make a solid rational proposition.

There have been instances of others who have had but a very tolerable power of memory, yet their judgment has been of a much superior degree, just and wise, solid and excellent.

Yet it must be acknowledged, that where a happy memory is found in any person, there is one good foundation laid for a wise and just judgment of things, wheresoever the natural genius has any thing of sagacity and brightness to make a right use of it. A good judgment must always in some measure depend upon a survey and comparison of several things together in the mind, and determining the truth of some doubtful proposition by that survey and comparison. When the mind has, as it were, set all those various objects present before it, which are necessary to form a true proposition or judgment concerning any thing, it then determines that such and such ideas are to be joined or disjoined, to be affirmed or denied; and this in a consistency and correspondence with all those other ideas or propositions which any way relate or belong to the

same subject. Now there can be no such comprehensive survey of many things without a tolerable degree of memory; it is by reviewing things past we learn to judge of the future: And it happens sometimes, that if one needful or important object or idea be absent, the judgment concerning the thing enquired will thereby become false or mistaken.

You will enquire then, How comes it to pass, that there are some persons who appear in the world of business as well as in the world of learning, to have a good judgment, and have acquired the just character of prudence and wisdom, and yet have neither a very bright genius, or sagacity of thought, nor a very happy memory, so that they cannot set before their minds at once a large scene of ideas, in order to pass a judgment.

Now we may learn from *Penseroso* some account of this difficulty. You shall scarce ever find this man forward in judging and determining things proposed to him: But he always takes time, and delays, and suspends, and ponders things maturely, before he passes his judgment: Then he practises a slow meditation, ruminates on the subject, and thus perhaps in two or three nights and days rouses and awakens those several ideas, one after another as he can, which are necessary in order to judge aright of the thing proposed, and makes them pass before his review in succession: This he doth to relieve the want both of a quick sagacity of thought, and of a ready memory and speedy recollection; and this caution and practice lay the foundation of his just judgment and wise conduct. He surveys well before he judges.

Whence I cannot but take occasion to infer one good rule of advice, to persons of higher as well as lower genius, and of large as well as narrow memories, *viz.* That they do not too hastily pronounce concerning matters of doubt or enquiry, where there is not an urgent necessity of present action. The bright genius is ready to be so forward as often betrays itself into great errors in judgment, speech, and conduct, without a continual guard upon itself, and using the bridle of the tongue. And it is by this delay and precaution, that many a person of much lower natural abilities shall often excel persons of the brightest genius in wisdom and prudence.

It is often found, that a fine genius has but a feeble memory: For where the genius is bright, and the imagination vivid, the power of memory may be too much neglected and lose its improvement. An active fancy readily wanders over a multitude of objects, and is continually entertaining itself with new flying images; it runs through a number of new scenes or new pages with pleasure, but without due attention, and seldom suffers itself to dwell long enough upon any one of them to make a deep impression thereof upon the mind, and commit it to lasting remembrance. This is one plain and obvious reason why there are some persons of very bright parts and active spirits, who have but short and narrow powers of remembrance; for having riches of their own, they are not solicitous to borrow.

And as such a quick and various fancy and invention may be some hindrance to the attention and memory, so a mind of a good retentive ability, and which is ever crowding its memory with things which it learns and reads continually, may prevent, restrain, and cramp the invention itself. The memory of *Lectorides* is ever ready upon all occasions to offer to his mind something out of other men's writings or conversations, and is presenting him with the thoughts of other persons perpetually: Thus the man who had naturally a good flowing invention, does not suffer himself to pursue his own thoughts.

Some persons who have been blessed by nature with sagacity and no contemptible genius, have too often forbid the exercise of it, by tying themselves down to the memory of the volumes they have read, and the sentiments of other men contained in them.

Where the memory has been almost constantly employing itself in scraping together new acquirements, and where there has not been a judgment sufficient to distinguish what things were fit to be recommended and treasured up in the memory, and what things were idle, useless, or needless, the mind has been filled with a wretched heap and hotch-potch of words, or ideas, and the soul may be said to have had large possessions, but no true riches.

I have read in some of Mr. Milton's writings a very beautiful simile, whereby he represents the books of the fathers, as they are called, in the Christian church. "Whatsoever," saith he, "old Time with his huge drag-net has conveyed down to us along the stream of ages, whether it be shells or shell-fish, jewels or pebbles, sticks or straws, sea-weeds or mud, these are the ancients, these are the fathers." The case is much the same with the memorial possessions of the greatest part of mankind. A few useful things perhaps, mixed and confounded with many trifles and all manner of rubbish, fill up their memories and compose their intellectual possessions. It is a great happiness therefore to distinguish things aright, and to lay up nothing in the memory but what has some just value in it, and is worthy to be numbered as a part of our treasure.

Whatsoever improvements arise to the mind of man from the wise exercise of his own reasoning powers, these may be called his proper manufactures; and whatsoever he borrows from abroad these may be termed his foreign treasures: Both together make a wealthy and happy mind.

How many excellent judgments and reasonings are framed in the mind of a man of wisdom and study in a length of years? How many worthy and admirable notions has he been possessed of in life, both by his own reasonings and by his prudent and laborious collections in the course of his reading? But, alas! how many thousands of them vanish away again and are lost in empty air, for want of a stronger and more retentive memory? When a young practitioner of the law was once said to contest a point of debate with that great lawyer in the last age, Serjeant Maynard, he is reported to have answered him, "Alas, young man, I have forgotten much more law than ever thou hast learned or read."

What an unknown and unspeakable happiness would it be to a man of judgment, and who is engaged in the pursuit of knowledge, if he had but a power of stamping all his own best sentiments upon his memory in some indelible characters; and if he could but imprint every valuable paragraph and sentiment of the most excellent authors he has read, upon his mind, with the same speed and facility with which he reads them? If a man of good genius and sagacity could but retain and survey all those numerous, those wise and beautiful ideas at once, which have ever passed through his thoughts upon any one subject, how admirably would he be furnished to pass a just judgment about all present objects and occurrences? What a glorious entertainment and pleasure would fill and felicitate his spirit, if he could grasp all these in a single survey; as the skilful eye of a painter runs over a fine and complicate piece of history wrought by the hand of a Titian or a Raphael, views the whole scene at once, and feeds himself with the extensive delight? But these are joys that do not belong to mortality.

Thus far I have indulged some loose and unconnected thoughts and remarks with

regard to the different powers of wit, memory, and judgment. For it was very difficult to throw them into a regular form or method without more room. Let us now with more regularity treat of the memory alone.

Though the memory be a natural faculty of the mind of man, and belongs to spirits which are not incarnate, yet it is greatly assisted or hindered, and much diversified by the brain or the animal nature to which the soul is united in this present state. But what part of the brain that is, wherein the images of things lie treasured up, is very hard for us to determine with certainty. It is most probable that those very fibres, pores or traces of the brain, which assist at the first idea or perception of any object, are the same which assist also at the recollection of it: And then it will follow that the memory has no special part of the brain devoted to its own service, but uses all those parts in general, which subserve our sensations as well as our thinking and reasoning powers.

As the memory grows and improves in young persons from their childhood, and decays in old age, so it may be increased by art and labour, and proper exercise; or it may be injured and quite spoiled by sloth, or by a disease, or a stroke on the head. There are some reasonings on this subject, which make it evident, that the goodness of a memory depends in a great degree upon the consistence and the temperature of that part of the brain, which is appointed to assist the exercise of all our sensible and intellectual faculties.

So for instance, in children; they perceive and forget a hundred things in an hour; the brain is so soft, that it receives immediately all impressions like water or liquid mud, and retains scarcely any of them: All the traces, forms or images which are drawn there, are immediately effaced or closed up again, as though you wrote with your finger on the surface of a river or on a vessel of oil.

On the contrary, in old age, men have a very feeble remembrance of things that were done of late, that is, the same day or week or year; the brain is grown so hard, that the present images or strokes make little or no impression, and therefore they immediately vanish: *Prisco* in his seventy-eighth year, will tell long stories of things done when he was in the battle at the Boyne almost fifty years ago, and when he studied at Oxford seven years before; for these impressions were made when the brain was more susceptive of them; they have been deeply engraven at the proper season, and therefore they remain. But words or things which he lately spoke or did, they are immediately forgot, because the brain is now grown more dry and solid in its consistence, and receives not much more impression, than if you wrote with your finger on a floor of clay, or a plastered wall.

But in the middle stage of life, or it may be from fifteen to fifty years of age, the memory is generally in its happiest state, the brain easily receives and long retains the images and traces which are impressed upon it, and the natural spirits are more active to range these little infinite unknown figures of things in their proper cells or cavities, to preserve and recollect them.

Whatsoever therefore keeps the brain in its best temper and consistence, may be a help to preserve the memory: But excess of wine or luxury of any kind, as well as excess in the studies of learning or the businesses of life, may overwhelm the memory, by overstraining and weakening the fibres of the brain, overwasting the spirits, injuring

the true consistence of that tender substance, and confounding the images that are laid up there.

A good memory has these several qualifications, 1. It is ready to receive and admit with great ease, the various ideas both of words and things which are learned or taught. 2. It is large and copious to treasure up these ideas in great number and variety. 3. It is strong and durable to retain for a considerable time those words or thoughts which are committed to it. 4. It is faithful and active to suggest and recollect upon every proper occasion, all those words or thoughts which have been recommended to its care, or treasured up in it.

Now in every one of these qualifications a memory may be injured, or may be improved: Yet I shall not insist distinctly on these particulars, but only in general propose a few rules or directions whereby this noble faculty of memory in all its branches and qualifications may be preserved or assisted, and shew what are the practices that both by reason and experience have been found of happy influence to this purpose.

There is one great and general direction which belongs to the improvement of other powers as well as of the memory, and that is, to keep it always in due and proper exercise. Many acts by degrees form a habit, and thereby the ability or power is strengthened and made more ready to appear again in action. Our memories should be used and inured from childhood to bear a moderate quantity of knowledge let into them early, and they will thereby become strong for use and service. As any limb well and duly exercised grows stronger, the nerves of the body are corroborated thereby. Milo took up a calf, and daily carried it on his shoulders: As the calf grew, his strength grew also, and he at last arrived at firmness of joints enough to bear the bull.

Our memories will be in a great measure moulded and formed, improved or injured, according to the exercise of them. If we never use them they will be almost lost. Those who are wont to converse or read about a few things only will retain but a few in their memory: Those who are used to remember things but for an hour, and charge their memories with it no longer, will retain them but an hour before they vanish, and let words be remembered as well as things, that so you may acquire a *copia verborum* as well as *rerum*, and be more ready to express your mind on all occasions.

Yet there should be a caution given in some cases: The memory of a child, or any infirm person, should not be overburdened, for a limb or a joint may be overstrained by being too much loaded, and its natural power never be recovered. Teachers should wisely judge of the power and constitution of youth, and impose no more on them than they are able to bear with cheerfulness and improvement.

And particularly they should take care, that the memory of the learner be not too much crowded with a tumultous heap or overbearing multitude of documents or ideas at any one time: This is the way to remember nothing; one idea effaces another. An over-greedy grasp does not retain the largest handful. But it is the exercise of memory with a due moderation, that is one general rule towards the improvement of it.

The particular rules are such as these:

1. Due attention and diligence to learn and know things which we would commit to our remembrance, is a rule of great necessity in this case. When the attention is strongly fixed to any particular subject, all that is said concerning it, makes a deeper impression upon the mind. There are some persons who complain they cannot re-

member divine or human discourses which they hear, when in truth their thoughts are wandering half the time, or they hear with such coldness and indifferency and a trifling temper of spirit, that it is no wonder the things which are read or spoken make but a slight impression on the brain, and get no firm footing in the seat of memory, but soon vanish and are lost.

It is needful therefore, if we would maintain a long remembrance of the things which we read or hear, that we should engage our delight and pleasure in those subjects, and use the other methods which are before prescribed, in order to fix the attention. Sloth, indolence and idleness, will no more bless the mind with intellectual riches, than it will fill the hand with gain, the field with corn, or the purse with treasure.

Let it be added also, that not only the slothful and the negligent deprive themselves of proper knowledge for the furniture of their memory, but such as appear to have active spirits, who are ever skimming over the surface of things with a volatile temper, will fix nothing in their mind. *Vario* will spend whole mornings in running over loose and unconnected pages, and with fresh curiosity is ever glancing over new words and ideas that strike his present fancy: He is fluttering over a thousand objects of art and science, and yet treasures up but little knowledge. There must be the labour and the diligence of close attention to particular subjects of thought and enquiry, which only can impress what we read or think of upon the remembering faculty in man.

2. Clear and distinct apprehension of the things which we commit to memory, is necessary, in order to make them stick and dwell there. If we would remember words, or learn the names of persons or things, we should have them recommended to our memory by clear and distinct pronunciation, spelling, or writing. If we would treasure up the ideas of things, notions, propositions, arguments and sciences, these should be recommended also to our memory by a clear and distinct perception of them. Faint glimmering and confused ideas will vanish like images seen in twilight. Every thing which we learn should be conveyed to the understanding in the plainest expressions without any ambiguity, that we may not mistake what we desire to remember. This is a general rule, whether we would employ the memory about words or things: Though it must be confessed, that mere sounds and words are much harder to get by heart than the knowledge of things and real images.

For this reason take heed, as I have often before warned, that you do not take up with words instead of things, nor mere sounds instead of real sentiments and ideas. Many a lad forgets what has been taught him, merely because he never well understood it: He never clearly and distinctly took in the meaning of those sounds and syllables which he was required to get by heart.

This is one true reason why boys make so poor a proficiency in learning the Latin tongue, under masters who teach them by grammars and rules written in Latin, of which I have spoken before. And this is a common case with children when they learn their catechisms in their early days. The language and the sentiments conveyed in those catechisms are far above the understandings of creatures of that age, and they have no tolerable ideas under the words. This makes the answers much harder to be remembered, and in truth they learn nothing but words without ideas; and if they are never so perfect in repeating the words, yet they know nothing of divinity.

And for this reason it is a necessary rule in teaching children the principles of religion, that they should be expressed in very plain, easy, and familiar words, brought as low as

possible down to their understandings, according to their different ages and capacities, and thereby they will obtain some useful knowledge when the words are treasured up in their memory, because at the same time they will treasure up those divine ideas too.

3. Method and regularity in the things we commit to memory is necessary, in order to make them take more effectual possession of the mind, and abide there long. As much as systematical learning is decried by some vain and humorous triflers of the age, it is certainly the happiest way to furnish the mind with a variety of knowledge.

Whatsoever you would trust to your memory let it be disposed in a proper method, connected well together, and referred to distinct and particular heads or classes, both general and particular. An apothecary's boy will much sooner learn all the medicines in his master's shop, when they are ranged in boxes or on shelves according to their distinct natures, whether herbs, drugs, or minerals, whether leaves or roots, whether chymical or galenical preparations, whether simple or compound, &c. and when they are placed in some order according to their nature, their fluidity, or their consistence, &c. in phials, bottles, gallipots, cases, drawers, &c. So the genealogy of a family is more easily learned when you begin at some great grandfather as the root, and distinguish the stock, the large boughs, the lesser branches, the twigs, and the buds, till you come down to the present infants of the house. And indeed all sorts of arts and sciences taught in a method something of this kind, are more happily committed to the mind or memory.

I might give another plain simile to confirm the truth of this. What horse or carriage can take up and bear away all the various rude and unwieldy loppings of a branchy tree at once? But if they are divided yet further, so as to be laid close, and bound up in a more uniform manner into several faggots, perhaps those loppings may be all carried as one single load or burden.

The mutual dependence of things on each other helps the memory of both. A wise connection of the parts of a discourse in a rational method gives great advantage to the reader or hearer, in order to his remembrance of it. Therefore many mathematical demonstrations in a long train may be remembered much better than a heap of sentences which have no connection. The book of Proverbs, at least from the tenth chapter and onwards, is much harder to remember, than the book of Psalms, for this reason; and some Christians have told me, that they remember what is written in the epistle to the Romans, and that to the Hebrews, much better than many others of the sacred epistles, because there is more exact method and connection observed in them.

He that would learn to remember a sermon which he hears should acquaint himself by degrees with the method in which the several important parts of it are delivered. It is a certain fault in a multitude of preachers, that they utterly neglect method in their harangues: Or at least they refuse to render their method visible and sensible to the hearers. One would be tempted to think it was for fear lest their auditors should remember too much of their sermons, and prevent their preaching them three or four times over: But I have candour enough to persuade myself, that the true reason is, they imagine it to be a more modish way of preaching without particulars: I am sure it is a much more useless one. And it would be of great advantage, both to the speaker and hearer, to have discourses for the pulpit cast into a plain and easy method, and the reasons or inferences ranged in a proper order, and that under the words, first, secondly, and

thirdly, however they may be now fancied to sound unpolite or unfashionable: But archbishop Tillotson did not think so in his days.

4. A frequent review and careful repetition of the things we would learn, and an abridgment of them in a narrow compass for this end, has a great influence to fix them in the memory: Therefore it is that the rules of grammar, and useful examples of the variation of words, and the peculiar forms of speech in any language, are so often appointed by the master as lessons for the scholars to be frequently repeated; and they are contracted into tables for frequent review, that what is not fixed in the mind at first, may be stamped upon the memory by a perpetual survey and rehearsal.

Repetition is so very useful a practice, that *Mnemon*, even from his youth to his old age, never read a book without making some small points, dashes, or hooks in the margin, to mark what parts of the discourse were proper for a review: And when he came to the end of a section or chapter, he always shut his book, and recollected all the sentiments or expressions he had remarked, so that he could give a tolerable analysis and abstract of every treatise he had read, just after he had finished it. Thence he became so well furnished with a rich variety of knowledge.

Even when a person is hearing a sermon or a lecture, he may give his thoughts leave now and then to step back so far as to recollect the several heads of it from the beginning, two or three times before the lecture or sermon is finished: The omission or the loss of a sentence or two among the amplifications, is richly compensated by preserving in the mind the method and order of the whole discourse in the most important branches of it.

If we would fix in the memory the discourses we hear, or what we design to speak, let us abstract them into brief compends, and review them often. Lawyers and divines have need of such assistances: They write down short notes or hints of the principal heads of what they desire to commit to their memory, in order to preach or plead; for such abstracts and epitomes may be reviewed much sooner, and the several amplifying sentiments or sentences will be more easily invented or recollected in their proper places. The art of short-hand is of excellent use for this as well as other purposes. It must be acknowledged, that those who scarcely ever take a pen in their hands to write short notes or hints of what they are to speak or learn, who never try to cast things into method, or to contract the survey of them, in order to commit them to their memory, had need have a double degree of that natural power of retaining and recollecting what they read or hear or intend to speak.

Do not plunge yourself into other businesses or studies, amusements or recreations, immediately after you have attended upon instruction, if you can well avoid it. Get time if possible to recollect the things you have heard, that they may not be washed all away from the mind by a torrent of other occurrences or engagements, nor lost in the crowd or clamour of other loud and importunate affairs.

Talking over the things which you have read with your companions, on the first proper opportunity you have for it, is a most useful manner of review or repetition, in order to fix them upon the mind. Teach them your younger friends, in order to establish your own knowledge while you communicate it to them. The animal powers of your tongue and of your ear, as well as your intellectual faculties, will all join together to help the memory. *Hermetas* studied hard in a remote corner of the land, and in solitude, yet he became a very learned man. He seldom was so happy as to enjoy

suitable society at home, and therefore he talked over to the fields and the woods in the evening what he had been reading in the day, and found so considerable advantage by this practice, that he recommended it to all his friends, since he could set his *probatum* to it for seventeen years.

5. Pleasure and delight in the things we learn give great assistance towards the remembrance of them. Whatsoever therefore we desire that a child should commit to his memory, make it as pleasant to him as possible; endeavour to search his genius and his temper; and let him take in the instructions you give him, or the lessons you appoint him, as far as may be, in a way suited to his natural inclination. *Fabellus* would never learn any moral lessons till they were moulded into the form of some fiction or fable, like those of Æsop, or till they put on the appearance of a parable, like those wherein our blessed Saviour taught the ignorant world: Then he remembered well the emblematical instructions that were given him, and learned to practise the moral sense and meaning of them. Young *Spectorius* was taught virtue, by setting before him a variety of examples of the various good qualities in human life; and he was appointed daily to repeat some story of this kind out of Valerius Maximus. The same lad was early instructed to avoid the common vices and follies of youth in the same manner. This is akin to the method whereby the Lacedæmonians trained up their children to hate drunkenness and intemperance, *viz.* by bringing a drunken man into their company, and shewing them what a beast he had made of himself. Such visible and sensible forms of instruction will make long and useful impressions upon the memory.

Children may be taught to remember many things in a way of sport and play. Some young creatures have learned their letters and syllables, and the pronouncing and spelling of words, by having them pasted or written upon many little flat tablets or dies. Some have been taught vocabularies of different languages, having a word in one tongue written on one side of these tablets, and the same word in another tongue on the other side of them.

There might be also many entertaining contrivances for the instruction of children in several things relating to geometry, geography, and astronomy, in such alluring and illusory methods, which would make a most agreeable and lasting impression on their minds.

6. The memory of useful things may receive considerable aid if they are thrown into verse: For the numbers and measures, and rhyme, according to the poesy of different languages, have a considerable influence upon mankind, both to make them receive with more ease the things proposed to their observation, and preserve them longer in their remembrance. How many are there of the common affairs of human life, which have been taught in early years by the help of rhyme, and have been like nails fastened in a sure place and rivetted by daily use?

So the number of the days of each month are engraved on the memory of thousands by these four lines:

Thirty days have September,
June, and April, and November:
February twenty-eight alone,
And all the rest have thirty-one.

So lads have been taught frugality by surveying and judging of their own expenses by these three lines :

Compute the pence but of one day's expense,
So many pounds and angels, groats and pence
Are spent in one whole year's circumference.

For the number of days in a year is three hundred and sixty-five, which number of pence make one pound, one angel, one groat, and one penny.

So have rules of health been prescribed in the book called *Schola Salernitana*, and many a person has preserved himself doubtless from evening gluttony, and the pains and diseases consequent upon it, by these two lines;

Ex magnâ cœnâ stomacho fit maxima pœna :
Ut sis nocte levis, sit tibi cœna brevis.

ENGLISHED :

To be easy all night
Let your supper be light :
Or else you'll complain
Of a stomach in pain.

And a hundred proverbial sentences in various languages are formed into rhyme or a verse, whereby they are made to stick upon the memory of old and young.

It is from this principle that moral rules have been cast into a poetic mould from all antiquity. So the *Golden Verses* of the Pythagoreans, in Greek; Cato's *Distichs De Moribus*, in Latin; Lilly's *Precepts to Scholars*, called *Qui mihi*, with many others; and this has been done with very good success. A line or two of this kind recurring on the memory, have often guarded youth from a temptation to vice and folly, as well as put them in mind of their present duty.

It is for this reason also that the genders, declensions, and variations of nouns and verbs have been taught in verse, by those who have complied with the prejudice of long custom, to teach English children the Latin tongue by rules written in Latin: And truly those rude heaps of words and terminations of an unknown tongue would have never been so happily learned by heart by a hundred thousand boys without this smoothing artifice; nor indeed do I know any thing else can be said, with good reason, to excuse or relieve the obvious absurdities of this practice.

When you would remember new things or words, endeavour to associate and connect them with some words or things which you have well known before, and which are fixed and established in your memory. This association of ideas is of great importance and force, and may be of excellent use in many instances of human life. One idea which is familiar to the mind, connected with others which are new and strange, will bring those new ideas into easy remembrance. *Maronides* had got the first hundred lines of Virgil's Æneis printed upon his memory so perfectly, that he knew not only the order and number of every verse from one to a hundred in perfection, but the order and number of every word in each verse also; and by this means he would undertake to remember two or three hundred names of persons or things by some rational or fantastic connection between some word in the verse, and some letter, syllable, pro-

perty, or accident of the name or thing to be remembered, even though they had been repeated but once or twice at most in his hearing. *Animanto* practised much the same art of memory by getting the Latin names of twenty-two animals into his head according to the alphabet, viz. *asinus, basiliscus, canis, draco, elephas, felis, gryphus, hircus, juvencus, leo, mulus, noctua, ovis, panthera, quadrupes, rhinoceros, simia, taurus, ursus, xiphias, hyæna* or *yæna, zibetta.* Most of these he divided also into four parts, *viz.* head and body, feet, fins, or wings, and tail, and by some arbitrary or chimerical attachment of each of these to a word or thing which he desired to remember, he committed them to the care of his memory, and that with good success.

It is also by this association of ideas, that we may better imprint any new idea upon the memory by joining with it some circumstance of the time, place, company, &c. wherein we first observed, heard, or learned it. If we would recover an absent idea, it is useful to recollect those circumstances of time, place, &c. The substance will many times be recovered and brought to the thoughts by recollecting the shadow: A man recurs to our fancy by remembering his garment, his size or stature, his office or employment, &c. A beast, bird, or fish by its colour, figure, or motion, by the cage, or court-yard, or cistern wherein it was kept, &c.

To this head also we may refer that remembrance of names and things, which may be derived from our recollection of their likeness to other things which we know; either their resemblance in name, character, form, accident, or any thing that belongs to them. An idea or word, which has been lost or forgotten, has been often recovered by hitting upon some other kindred word or idea, which has the nearest resemblance to it, and that in the letters, syllables, or sound of the name, as well as properties of the thing.

If we would remember Hippocrates, or Galen, or Paracelsus, think of a physician's name beginning with H, G, or P. If we will remember Ovidius Naso, we may represent a man with a great nose; if Plato, we may think upon a person with large shoulders; if Crispus, we shall fancy another with curled hair; and so of other things.

And sometimes a new or strange idea may be fixed in the memory by considering its contrary or opposite. So if we cannot hit on the word Goliath, the remembrance of David may recover it: Or the name of a Trojan may be recovered by thinking of a Greek, &c.

8. In such cases wherein it may be done, seek after a local memory, or a remembrance of what you have read by the side or page where it is written or printed; whether the right or the left, whether at the top, the middle or the bottom; whether at the beginning of a chapter or a paragraph, or the end of it. It has been some advantage, for this reason, to accustom one's self to books of the same edition: And it has been of constant and special use to divines and private Christians, to be furnished with several Bibles of the same edition; that wheresoever they are, whether in their chamber, parlour, or study, in the younger or elder years of life, they may find the chapters and verses standing in the same parts of the page.

This is also a great conveniency to be observed by printers in the new editions of Grammars, Psalms, Testaments, &c. to print every chapter, paragraph or verse in the same part of the page as the former, that so it may yield a happy assistance to those young learners, who find, and even feel, the advantage of a local memory.

9. Let every thing we desire to remember be fairly and distinctly written and divided

into periods, with large characters in the beginning, for by this means we shall the more readily imprint the matter and words on our minds, and recollect them with a glance, the more remarkable the writing appears to the eye. This sense conveys the ideas to the fancy better than any other; and what we have seen is not so soon forgotten as what we have only heard. What Horace affirms of the mind or passions may be said also of the memory:

Segniùs irritant animos demissa per aurem,
Quàm quæ sunt oculis subjecta fidelibus, et quæ
Ipse sibi tradit spectator.

APPLIED THUS IN ENGLISH:

Sounds which address the ear are lost and die
In one short hour; but that which strikes the eye
Lives long upon the mind; the faithful sight
Engraves the knowledge with a beam of light.

For the assistance of weak memories, the first letters or words of every period, in every page, may be written in distinct colours; yellow, green, red, black, &c. and if you observe the same order of colours in the following sentences, it may be still the better. This will make a greater impression, and may much aid the memory.

Under this head we may take notice of the advantage which the memory gains, by having the several objects of our learning drawn out into schemes and tables; matters of mathematical science and natural philosophy are not only let into the understanding, but preserved in the memory by figures and diagrams. The situation of the several parts of the earth are better learned by one day's conversing with a map or sea-chart, than by mere reading the description of their situation a hundred times over in books of geography. So the constellations in astronomy, and their position in the heavens, are more easily remembered by hemispheres of the stars well drawn. It is by having such sort of memorials, figures, and tables, hung round our studies or places of residence or resort, that our memory of these things will be greatly assisted and improved, as I have shewn at large in the twentieth chapter, of the Use of the Sciences.

I might add here also, that once writing over what we design to remember, and giving due attention to what we write, will fix it more in the mind than reading it five times. And in the same manner, if we had a plan of the naked lines of longitude and latitude, projected on the meridian, printed for this use, a learner might much more speedily advance himself in the knowledge of geography by his own drawing the figures of all the parts of the world upon it by imitation, than by many days survey of a map of the world so printed. The same also may be said concerning the constellations of heaven, drawn by the learner on a naked projection of the circles of the sphere upon the plane of the equator.

10. It has sometimes been the practice of men to imprint names or sentences on their memory, by taking the first letters of every word of that sentence or of those names, and making a new word out of them. So the name of the Maccabees is borrowed from the first letters of the Hebrew words which make that sentence *Mi camoka baelim Jehovah*, that is, "Who is like Thee among the gods?" Which was written on their banners. Jesus Christ our Saviour hath been called a fish, in Greek

ΙΧΘΥΣ, by the fathers, because these are the first letters of those Greek words, Jesus Christ, God's Son, the Saviour. So the word *vibgyor* teaches us to remember the order of the seven original colours as they appear by the sun-beams cast through a prism on a white paper, or formed by the sun in a rainbow, according to the different refrangibility of the rays, *viz.* violet, indigo, blue, green, yellow, orange, and red.

In this manner the Hebrew grammarians teach their students to remember the letters which change their natural pronunciation by the inscription of a *dagesh*, by gathering these six letters *beth*, *gimel*, *daleth*, *caph*, *pe*, and *thau*, into the word *begadchephat*; and that they might not forget the letters named quiescent, *viz.* *a*, *h*, *v*, and *i*, they are joined in the word *ahevi*. So the universal and particular propositions in logick are remembered by the words *barbara*, *celarent*, *darii*, &c.

Other artificial helps to memory may be just mentioned here.

Dr. Grey, in his book called *Memoria Technica*, has exchanged the figures 1, 2, 3, 4, 5, 6, 7, 8, 9, for some consonants, *b*, *d*, *t*, *f*, *l*, *y*, *p*, *k*, *n*, and some vowels, *a*, *e*, *i*, *o*, *u*, and several diphthongs, and thereby formed words that denote numbers, which may be more easily remembered: And Mr. Lowe has improved his scheme in a small pamphlet called *Mnemonics Delineated*, whereby in seven leaves he has comprized almost an infinity of things in science and in common life, and reduced them to a sort of measure like Latin verse; though the words may be supposed to be very barbarous, being such a mixture of vowels and consonants as are very unfit for harmony.

But after all, the very writers on this subject have confessed, that several of these artificial helps of memory are so cumbersome as not to be suitable to every temper or person; nor are they of any use for the delivery of a discourse by memory, nor of much service in learning the sciences: But they may be sometimes practised for the assisting our remembrance of certain sentences, numbers, or names.

CHAPTER XVIII.

OF DETERMINING A QUESTION.

I. WHEN a subject is proposed to your thoughts, consider whether it be knowable at all, or no; and then whether it be not above the reach of your enquiry and knowledge in the present state; and remember that it is a great waste of time, to busy yourselves too much amongst unsearchables: The chief use of these studies is to keep the mind humble, by finding its own ignorance and weakness.

II. Consider again whether the matter be worthy of your enquiry at all; and then, how far it may be worthy of your present search and labour, according to your age, your time of life, your station in the world, your capacity, your profession, your chief design and end. There are many things worth enquiry to one man, which are not so to another; and there are things that may deserve the study of the same person in one part of life, which would be improper or impertinent at another. To read books of the art of preaching, or disputes about church discipline, are proper for a theological student in the end of his academical studies, but not at the beginning of them. To pursue mathematical studies very largely may be useful for a professor of philosophy, but not for a divine.

III. Consider whether the subject of your enquiry be easy or difficult: whether you have sufficient foundation or skill, furniture and advantages for the pursuit of it. It would be madness for a young statuary to attempt at first to carve a Venus or a Mercury, and especially without proper tools. And it is equal folly for a man to pretend to make great improvements in natural philosophy without due experiments.

IV. Consider whether the subject be any ways useful or no, before you engage in the study of it: often put this question to yourselves, *Cui bono?* to what purpose? What end will it attain? Is it for the glory of God, for the good of men, for your own advantage, for the removal of any natural or moral evil, for the attainment of any natural or moral good? Will the profit be equal to the labour? There are many subtle impertinences learned in the schools, many painful trifles, even among the mathematical theorems and problems, many *difficiles nugæ* or laborious follies of various kinds, which some ingenious men have been engaged in. A due reflection upon these things will call the mind away from vain amusements, and save much time.

V. Consider what tendency it has to make you wiser and better, as well as to make you more learned; and those questions which tend to wisdom and prudence in our conduct among men, as well as piety towards God, are doubtless more important, and preferable beyond all those enquiries which only improve our knowledge in mere speculations.

VI. If the question appear to be well worth your diligent application, and you are furnished with the necessary requisites to pursue it, then consider whether it be dressed up and entangled in more words than is needful, and contain or include more complicated ideas than is necessary; and if so, endeavour to reduce it to a greater simplicity and plainness, which will make the enquiry and argument easier and plainer all the way.

VII. If it be stated in an improper, obscure, or irregular form, it may be meliorated by changing the phrase, or transposing the parts of it; but be careful always to keep the grand and important point of enquiry the same in your new stating the question. Little tricks and deceits of sophistry, by sliding in, or leaving out such words as entirely change the question, should be abandoned and renounced by all fair disputants and honest searchers after truth.

The stating a question with clearness and justice goes a great way many times toward the answering it. The greatest part of true knowledge lies in a distinct perception of things which are in themselves distinct; and some men give more light and knowledge by the bare stating of the question with perspicuity and justness, than others by talking of it in gross confusion for whole hours together. To state a question is but to separate and disentangle the parts of it from one another, as well as from every thing which doth not concern the question, and then to lay the disentangled parts of the question in due order and method; oftentimes without more ado this fully resolves the doubt, and shews the mind where the truth lies, without argument or dispute.

VIII. If the question relate to an axiom or first principle of truth, remember that a long train of consequences may depend upon it, therefore it should not be suddenly admitted and received.

It is not enough to determine the truth of a proposition, much less to raise it to the honour of an axiom or first principle; to say, that it has been believed through many ages, that it has been received by many nations, that it is almost universally acknow-

ledged or no body denies it, that it is established by human laws, or that temporal penalties or reproaches will attend the disbelief of it.

IX. Nor is it enough to forbid any proposition the title of an axiom, because it has been denied by some persons and doubted of by others; for some persons have been unreasonably credulous, and others have been as unreasonably sceptical. Then only should a proposition be called an axiom or a self-evident truth, when by a moderate attention to the subject and predicate, their connection appears in so plain a light and so clear an evidence, as needs no third idea or middle term to prove them to be connected.

X. While you are in search after truth in questions of a doubtful nature, or such as you have not yet thoroughly examined, keep up a just indifference to either side of the question, if you would be led honestly into the truth: For a desire or inclination leaning to either side, biasses the judgment strangely; whereas by this indifference for every thing but truth, you will be excited to examine fairly instead of presuming, and your assent will be secured from going beyond your evidence.

XI. For the most part people are born to their opinions, and never question the truth of what their family, or their country, or their party profess. They clothe their minds, as they do their bodies, after the fashion in vogue, nor one of a hundred ever examines their principles. It is suspected of lukewarmness to suppose examination necessary, and it will be charged as a tendency to apostacy if we go about to examine them. Persons are applauded for presuming they are in the right, and, as Mr. Locke saith, he that considers and enquires into the reason of things is counted a foe to orthodoxy, because possibly he may deviate from some of the received doctrines. And thus men without any industry or acquisition of their own, lazy and idle as they are, inherit local truths, that is, the truths, of that place where they live, and are inured to assent without evidence.

This hath a long and unhappy influence; for if a man can bring his mind once to be positive and fierce for propositions whose evidence he hath never examined, and that in matters of the greatest concernment, he will naturally follow this short and easy way of judging and believing in cases of less moment, and build all his opinions upon insufficient grounds.

XII. In determining a question, especially when it is a matter of difficulty and importance, do not take up with partial examination but turn your thoughts on all sides, to gather in all the light you can toward the solution of it. Take time, and use all the helps that are to be attained, before you fully determine, except only where present necessity of action calls for speedy determination.

If you would know what may be called a partial examination, take these instances, *viz.*

When you examine an object of sense, or enquire into some matter of sensation at too great a distance from the object, or in an inconvenient situation of it, or under any indisposition of the organs, or any disguise whatsoever relating to the medium or the organ of the object itself; or when you examine it by one sense only, where others might be employed; or when you enquire into it by sense only, without the use of the understanding, and judgment, and reason.

If it be a question which is to be determined by reason and argument, then your examination is partial, when you turn the question only in one light, and do not turn it on all sides; when you look upon it only in its relations and aspects to one sort of

objects and not to another; when you consider only the advantages of it and the reasons for it, and neglect to think of the reasons against it, and never survey its inconveniences too: When you determine on a sudden, before you have given yourself a due time for weighing all circumstances, &c.

Again, If it be a question of fact depending upon the report or testimony of men, your examination is but partial, when you enquire only what one man or a few say, and avoid the testimony of others, when you only ask what those report who were not eye or ear witnesses, and neglect those who saw and heard it; when you content yourself with mere loose and general talk about it, and never enter into particulars; or when there are many who deny the fact, and you never concern yourself about their reasons for denying it, but resolve to believe only those who affirm it.

There is yet further a fault in your partial examination of any question, when you resolve to determine it by natural reason only, where you might be assisted by supernatural revelation; or when you decide the point by some word or sentence, or by some part of revelation; without comparing it with other parts, which might give further light and better help to determine the meaning.

It is also a culpable partiality, if you examine some doubtful or pretended vision or revelation without the use of reason; or without the use of that revelation, which is undoubted and sufficiently proved to be divine. These are all instances of imperfect examination, and we should never determine a question by one or two lights, where we may have the advantage of three or four.

XIII. Take heed lest some darling notion, some favourite hypothesis, some beloved doctrine, or some common but unexamined opinion, be made a test of the truth or falsehood of all other propositions about the same subject. Dare not build much upon such a notion or doctrine till it be very fully examined, accurately adjusted, and sufficiently confirmed. Some persons, by indulging such a practice, have been led into long ranks of errors; they have found themselves involved in a train of mistakes, by taking up some pretty hypothesis or principle, either in philosophy, politics, or religion, upon slight and insufficient grounds, and establishing that as a test and rule by which to judge of all other things.

XIV. For the same reason, have a care of suddenly determining any one question on which the determination of any kindred or parallel cases will easily or naturally follow. Take heed of receiving any wrong turn in your early judgment of things; be watchful, as far as possible, against any false bias which may be given to the understanding, especially in younger years. The indulgence of some one silly opinion, or the giving credit to one foolish fable, lays the mind open to be imposed upon by many. The ancient Romans were taught to believe, that Romulus and Remus, the founders of their state and empire, were exposed in the woods and nursed by a wolf: This story prepared their minds for the reception of any tales of the like nature relating to other countries. Trogus Pompeius would enforce the belief, that one of the ancient kings of Spain was also nursed and suckled by a hart, from the fable of Romulus and Remus. It was by the same influence they learned to give up their hopes and fears to omens and soothsaying: When they were once persuaded that the greatness of their empire and the glory of Romulus, their founder, were predicted by the happy omen of twelve vultures appearing to him when he sought where to build the city, they readily received all the following legends of prodigies, auguries, and prognostics, for many ages together, with which Livy has furnished his huge history.

So the child who is once taught to believe any one occurrence to be a good or evil omen, or any day of the month or week to be lucky or unlucky, hath a wide inroad made on the soundness of his understanding in the following judgments of his life: He lies ever open to all the silly impressions and idle tales of nurses, and imbibes many a foolish story with greediness, which he must unlearn again if ever he become acquainted with truth and wisdom.

XV. Have a care of interesting your warm and religious zeal in those matters which are not sufficiently evident in themselves, or which are not fully and thoroughly examined and proved: For this zeal, whether right or wrong, when it is once engaged, will have a powerful influence to establish your own minds in those doctrines which are really doubtful, and to stop up all the avenues of further light. This will bring upon the soul a sort of sacred awe and dread of heresy; with a divine concern to maintain whatever opinion you have espoused as divine, though perhaps you have espoused it without any just evidence, and ought to have renounced it as false and pernicious.

We ought to be zealous for the most important points of our religion, and to contend earnestly for the faith once delivered to the saints; but we ought not to employ this sacred fervour of spirit in the service of any article, till we have seen it made out with plain and strong conviction, that it is a necessary or important point of faith or practice, and is either an evident dictate of the light of nature, or an assured article of revelation. Zeal must not reign over the powers of our understanding, but obey them: God is the God of light and truth, a God of reason and order, and he never requires mankind to use their natural faculties amiss for the support of his cause. Even the most mysterious and sublime doctrines of revelation are not to be believed without a just reason for it; nor should our pious affections be engaged in the defence of them, till we have plain and convincing proof that they are certainly revealed, though perhaps we may never in this world attain to such clear and distinct ideas of them as we desire.

XVI. As a warm zeal ought never to be employed in the defence of any revealed truth, till our reason be well convinced of the revelation; so neither should wit and banter, jest and ridicule, ever be indulged to oppose or assault any doctrines of professed revelation, till reason has proved they are not really revealed: And even then, these methods should be used very seldom, and with the utmost caution and prudence. Raillery and wit were never made to answer our enquiries after truth, and to determine a question of rational controversy; though they may sometimes be serviceable to expose to contempt those inconsistent follies which have been first abundantly refuted by argument; they serve indeed only to cover nonsense with shame, when reason has first proved it to be mere nonsense.

It is therefore a silly and most unreasonable test, which some of our deists have introduced to judge of divine revelation, *viz.* to try if it will bear ridicule and laughter. They are effectually beaten in all their combats at the weapons of men, that is, reason and argument; and it would not be unjust, though it is a little uncourtly, to say that they would now attack our religion with the talents of a vile animal, that is, grin and grimace.

I cannot think that a jester or a monkey, a droll or a puppet, can be proper judges or deciders of controversy. That which dresses up all things in disguise, is not likely to lead us into any just sentiments about them. Plato or Socrates, Cæsar or Alexander,

might have a fool's coat clapped upon any of them, and perhaps, in this disguise, neither the wisdom of the one, nor the majesty of the other, would secure them from a sneer; this treatment would never inform us whether they were kings or slaves, whether they were fools or philosophers. The strongest reasoning, the best sense, and the politest thoughts, may be set in a most ridiculous light by this grinning faculty: The most obvious axioms of eternal truth may be dressed in a very foolish form, and wrapped up in artful aburdities by this talent; but they are truth, and reason, and good sense, still. Euclid, with all his demonstrations, might be so covered and overwhelmed with banter, that a beginner in the mathematics might be tempted to doubt, whether his theorems were true or no, and to imagine they could never be useful. So weaker minds might be easily prejudiced against the noblest principles of truth and goodness; and the younger part of mankind might be beat off from the belief of the most serious, the most rational and important points even of natural religion, by the impudent jests of a profane wit. The moral duties of the civil life, as well as the articles of Christianity, may be painted over with the colours of folly, and exposed upon a stage, so as to ruin all social and personal virtue among the gay and thoughtless part of the world.

XVII. It should be observed also, that these very men cry out loudly against the use of all severe railing and reproach in debates, and all penalties and persecutions of the state, in order to convince the minds and consciences of men and determine points of truth and error. Now I renounce these penal and smarting methods of conviction as much as they do, and yet I think still these are every whit as wise, as just, and as good for this purpose, as banter and ridicule. Why should public mockery in print, or a merry joke upon a stage, be a better test of truth, than severe railing sarcasms and public persecutions and penalties? Why should more light be derived to the understanding by a song of scurrilous mirth, or a witty ballad, than there is by a rude cudgel? When a professor of any religion is set up to be laughed at, I cannot see how this should help us to judge of the truth of his faith, any better than if he were scourged. The jeers of a theatre, the pillory, and the whipping-post, are very near akin. When the person, or his opinion, is made the jest of the mob, or his back the shambles of the executioner, I think there is no more conviction in the one than in the other.

XVIII. Besides, supposing it is but barely possible that the great God should reveal his mind and will to men by miracle, vision, or inspiration, it is a piece of contempt and profane insolence, to treat any tolerable or rational appearance of such a revelation with jest and laughter, in order to find whether it be divine or not. And yet if this be a proper test of revelation, it may be properly applied to the true as well as the false, in order to distinguish it. Suppose a royal proclamation were sent to a distant part of the kingdom, and some of the subjects should doubt whether it came from the king or no; is it possible that wit and ridicule should ever decide the point? Or would the prince ever think himself treated with just honour, to have his proclamation canvassed in this manner on a public stage, and become the sport of buffoons, in order to determine the question, Whether it is the word of a king or no?

Let such sort of writers go on, at their dearest peril, and sport themselves in their own deceivings; let them, at their peril, make a jest at the Bible, and treat the sacred articles of Christianity with scoff and merriment: But then let them lay aside all their pretences to reason as well as religion; and as they expose themselves by such writings

to the neglect and contempt of men, so let them prepare to meet the majesty and indignation of God, without timely repentance.

XIX. In reading philosophical, moral, or religious controversies, never raise your esteem of any opinion by the assurance and zeal wherewith the author asserts it, nor by the highest praises he bestows upon it: Nor, on the other hand, let your esteem of an opinion be abated, nor your aversion to it raised, by the supercilious contempt cast upon it by a warm writer, nor by the sovereign airs with which he condemns it. Let the force of argument alone influence your assent or dissent. Take care that your soul be not warped or biassed on one side or the other, by any strains of flattering or abusive language; for there is no question whatsoever, but hath some such sort of defenders and opposers. Leave those writers to their own follies, who practise thus upon the weakness of their readers without argument: Leave them to triumph in their own fancied possessions and victories: It is oftentimes found that their possessions are but a heap of errors, and their boasted victories are but overbearing noise and clamour, to silence the voice of truth.

In philosophy and religion, the bigots of all parties are generally the most positive, and deal much in this sort of arguments. Sometimes these are the weapons of pride; for a haughty man supposes all his opinions to be infallible, and imagines the contrary sentiments are ever ridiculous and not worthy of notice. Sometimes these ways of talking are the mere arms of ignorance; the men who use them know little of the opposite side of the question, and therefore they exult in their own vain pretences to knowledge, as though no man of sense could oppose their opinion. They rail at an objection against their own sentiments, because they can find no other answer to it but railing. And men of learning by their excessive vanity, have been sometimes tempted into the same insolent practice as well as the ignorant.

Yet let it be remembered too, that there are some truths so plain and evident, that the opposition to them is strange, unaccountable, and almost monstrous: And in vindication of such truths, a writer of good sense may sometimes be allowed to use a degree of assurance, and pronounce them strongly with an air of confidence, while he defends them with reasons of convincing force.

XX. Sometimes a question may be proposed, which is of so large and extensive a nature, and refers to such a multitude of subjects, as ought not in justice to be determined at once by a single argument or answer: As if one should ask me, Are you a professed disciple of the Stoics or the Platonists? Do you receive and assent to the principles of Gassendus, Descartes, or Sir Isaac Newton? Have you chosen the hypothesis of Tycho or Copernicus? Have you devoted yourself to the sentiments of Arminius or Calvin? Are your notions episcopal, presbyterian, or independent? &c. I think it may be very proper in such cases not to give an answer in the gross, but rather to enter into a detail of particulars, and explain one's own sentiments. Perhaps there is no man, nor set of men upon earth, whose sentiments I entirely follow. God has given me reason to judge for myself, and though I may see sufficient ground to agree to the greatest part of the opinions of one person or party, yet it does by no means follow that I should receive them all. Truth does not always go by the lump, nor does error tincture and spoil all the articles of belief that some one party professes.

Since there are difficulties attending every scheme of human knowledge, it is enough for me in the main to incline to that side which has the fewest difficulties; and I would

endeavour, as far as possible, to correct the mistakes or the harsh expressions of one party, by softening and reconciling methods, by reducing the extremes, and by borrowing some of the best principles or phrases from another. Cicero was one of the greatest men of antiquity, and gives us an account of the various opinions of philosophers in his age; but he himself was of the Eclectic sect, and chose out of each of them such positions as in his wisest judgment came nearest to the truth.

XXI. When you are called, in the course of life or religion, to judge and determine concerning any question, and to affirm or deny it, take a full survey of the objections against it, as well as of the arguments for it, as far as your time and circumstances admit, and see on which side the preponderation falls. If either the objections against any proposition, or the arguments for the defence of it, carry in them most undoubted evidence, and are plainly unanswerable, they will and ought to constrain the assent, though there may be many seeming probabilities on the other side, which at first sight would flatter the judgment to favour it. But where the reasons on both sides are very near of equal weight, there suspension or doubt is our duty, unless in cases wherein present determination or practice is required, and there we must act according to the present appearing preponderation of reasons.

XXII. In matters of moment and importance, it is our duty indeed to seek after certain and conclusive arguments, if they can be found, in order to determine a question: But where the matter is of little consequence, it is not worth our labour to spend much time in seeking after certainties; it is sufficient here, if probable reasons offer themselves. And even in matters of greater importance, especially where daily practice is necessary, and where we cannot attain any sufficient or certain grounds to determine a question on either side, we must then take up with such probable arguments as we can arrive at. But this general rule should be observed, *viz.* to take heed that our assent be no stronger, or rise no higher in the degree of it, than the probable argument will well support.

XXIII. There are many things, even in religion, as well as in philosophy and the civil life, which we believe with very different degrees of assent: And this is, or should be, always regulated according to the different degrees of evidence which we enjoy: And perhaps there are a thousand gradations in our assent to the things we believe, because there are thousands of circumstances relating to different questions, which increase or diminish the evidence we have concerning them, and that in matters both of reason and revelation.

I believe there is a God, and that obedience is due to him from every reasonable creature: This I am most fully assured of, because I have the strongest evidence, since it is the plain dictate both of reason and revelation.

Again, I believe there is a future resurrection of the dead, because scripture tells us so in the plainest terms, though reason says nothing of it. I believe also, that the same matter of our bodies which died, in part at least, shall arise; but I am not so fully assured of this circumstance, because the revelation of it is not quite so clear and express. Yet further, I believe that the good men who were acquainted here on earth, shall know each other in heaven; but my persuasion of it is not absolutely certain, because my assent to it arises only from circumstantial reasonings of men upon what God has told us, and therefore my evidences are not strong beyond a possibility of mistake. This direction cannot be too often repeated, that our assent ought always to keep pace with our evidence; and our belief of any proposition should never rise higher

than the proof or evidence we have to support it, nor should our faith run faster than right reason can encourage it.

XXIV. Perhaps it will be objected here, why then does our Saviour, in the histories of the gospel, so much commend a strong faith; and lay out both his miraculous benefits and his praises upon some of those poor creatures of little reasoning, who professed an assured belief of his commission and power to heal them?

I answer, the God of nature has given every man his own reason to be the judge of evidence to himself in particular, and to direct his assent in all things about which he is called to judge; and even the matters of revelation are to be believed by us, because our reason pronounces the revelation to be true. Therefore the great God will not, or cannot in any instances, require us to assent to any thing without reasonable or sufficient evidence, nor to believe any proposition more strongly than what our evidence for it will support. We have therefore abundant ground to believe, that those persons, of whom our Saviour requires such a strong faith, or whom he commends for their strong faith, had as strong and certain evidence of his power and commission, from the credible and incontestable reports they had heard of his miracles, which were wrought on purpose to give evidence to his commission.* Now in such a case, both this strong faith and the open profession of it were very worthy of public encouragement and praise from our Saviour, because of the great and public opposition which the magistrates and the priests, and the doctors of the age, made against Jesus the man of Nazareth, when he appeared as the Messiah.

And besides all this it may be reasonably supposed, with regard to some of those strong exercises of faith which are required and commended, that these believers had some further hints of inward evidence and immediate revelation from God himself; as when St. Peter confesses Christ to be the Son of God, *Matt.* xvi. 16, 17, our blessed Saviour commends him, saying, *Blessed art thou, Simon Bar-jona;* but he adds, *flesh and blood hath not revealed it unto thee, but my Father which is in heaven.*

And the same may be said concerning the faith of miracles, the exercise whereof was sometimes required of the disciples and others, that is, when by inward and divine influences God assured them such miracles should be wrought, their obedience to and compliance with these divine illuminations was expected and commended. Now this supernatural inspiration carried sufficient evidence with it to them, as well as to the ancient prophets, though we, who never felt it, are not so capable to judge and distinguish it.

XXV. What is said before concerning truth or doctrines, may be also affirmed concerning duties; the reason of both is the same: As the one are truths for our speculation, the other are truths for our practice. Duties which are expressly required in the plain language of scripture, or dictated by the most evident reasoning upon first principles, ought to bind our consciences more than those which are but dubiously inferred, and that only from occasional occurrences, incidents, and circumstances: As for instance, I am certain that I ought to pray to God; my conscience is bound to this,

* When our Saviour gently reproves Thomas for his unbelief, John xx. 29, he does it in these words: *Because thou hast seen me, Thomas, thou hast believed: Blessed are they who have not seen and yet have believed;* that is, blessed are they who, though they have not been favoured with the evidence of their senses as thou hast been, yet have been convinced by the reasonable and sufficient moral evidence of the well grounded report of others, and have believed in me upon that evidence. Of this moral evidence Mr. Ditton writes exceedingly well, in his book of the Resurrection of Christ.

because there are most evident commands for it to be found in scripture, as well as to be derived from reason. I believe also that I may pray to God, either by a written form, or without one, because neither reason nor revelation expressly requires either of these modes of prayer at all times, nor forbids the other. I cannot therefore bind my conscience to practise the one, so as utterly to renounce the other; but I would practise either of them, as my reason and other circumstances direct me.

Again, I believe that Christians ought to remember the death of Christ by the symbols of bread and wine; and I believe there ought to be pastors in a christian church, some way ordained, or set apart, to lead the worship, and to bless and distribute these elements; but the last of these practices is not so expressly directed, prescribed, and required in scripture as the former; and therefore I feel my conscience evidently bound to remember the death of Christ with some society of Christians or other, since it is a most plain command, though their methods of ordaining a pastor be very different from other men, or from my own opinion; or whether the person who distributes these elements, be only an occasional or a settled administrator; since none of these things are plainly determined in scripture. I must not omit or neglect an express command, because some unnecessary circumstances are dubious. And I trust I shall receive approbation from the God of nature, and from Jesus my judge, at the last day, if I have endeavoured in this manner to believe and practise every thing in proportion to the degree of evidence which God has given me about it, or which he has put me into a capacity to seek and obtain in the age and nation wherein I live.

Query, Whether the obstinate deists and the fatalists of Great Britain, will find sufficient apology from this principle? But I leave them to venture the awful experiment.

XXVI. We may observe these three rules, in judging of probabilities which are to be determined by reason, relating either to things past, or things to come:

1. That which agrees most with the constitution of nature carries the greatest probability in it, where no other circumstance appears to counterpoise it: As, if I let loose a greyhound within sight of a hare upon a large plain, there is great probability the greyhound will seize her; that a thousand sparrows will fly away at the sight of a hawk among them.

2. That which is most conformable to the constant observations of men, or to experiments frequently repeated, is most likely to be true: As, that a winter will not pass away in England without some frost and snow; that if you deal out great quantities of strong liquor to the mob, there will be many drunk; that a large assembly of men will be of different opinions in any doubtful point; that a thief will make his escape out of prison, if the doors of it are unguarded at midnight.

3. In matters of fact which are past or present, where neither nature, nor observation, nor custom gives us any sufficient information on either side of the question, there we may derive a probability from the attestation of wise and honest men by word or writing, or the concurring witness of multitudes who have seen and known what they relate, &c. This testimony in many cases will arrive to the degree of moral certainty. So we believe that the plant tea grows in China; and that the emperor of the Turks lives at Constantinople; that Julius Cæsar conquered France, and that Jesus our Saviour lived and died in Judea; that thousands were converted to the christian faith in a century after the death of Christ; and that the books which contain the christian religion, are certain histories and epistles which were written above a thousand years ago.

There is an infinite variety of such propositions which can admit of no reasonable doubt, though they are not matters which are directly evident to our own senses, or our mere reasoning powers.

XXVII. When a point hath been well examined and our own judgment settled upon just arguments in our manly age, and after a large survey of the merits of the cause, it would be a weakness for us always to continue fluttering in suspense. We ought therefore to stand firm in such well established principles, and not to be tempted to change and alter for the sake of every difficulty, or every occasional objection. We are not to be carried about with every flying doctrine, like children tossed to and fro, and wavering with the wind. It is a good thing to have the heart established with grace, not with meats; that is, in the great doctrines of the gospel of grace, and in Jesus Christ, who is the same yesterday, to-day, and for ever; but it is not so necessary in the more minute matters of religion, such as meats and drinks, forms and ceremonies, which are of less importance, and for which scripture has not given such express directions. This is the advice of the great apostle; *Eph.* iv. 14. *Heb.* xiii. 8, 9.

In short, those truths which are the springs of daily practice should be settled as soon as we can with the exercise of our best powers, after the state of manhood: But those things wherein we may possibly mistake should never be so absolutely and finally established and determined, as though we were infallible. If the papists of Great Britain had indulged such a resolute establishment and assurance in the days of king Henry VIII. or queen Elizabeth, there never had been a reformation: Nor would any heathen have been converted even under the ministry of St. Paul, if their obstinate settlement in their idolatries had kept their eyes shut against all further light. Yet this should not hinder us from settling our most important principles of faith and practice, where reason shines with its clearest evidence, and the word of God plainly determines truth and duty.

XXVIII. But let us remember also, that though the gospel be an infallible revelation, we are but fallible interpreters, when we determine the sense even of some important propositions written there; and therefore, though we seem to be established in the belief of any particular sense of scripture, and though there may be just calls of providence to profess and subscribe it, yet there is no need that we should resolve or promise, subscribe or swear never to change our mind: Since it is possible, in the nature and course of things, we may meet with such a solid and substantial objection, as may give us a quite different view of things from what we once imagined, and may lay before us sufficient evidence of the contrary. We may happen to find a fairer light cast over the same scriptures, and see reason to alter our sentiments even in some points of moment. *Sic sentio, sic sentiam*, that is, So I believe, and so I will believe, is the prison of the soul for life-time, and a bar against all the improvements of the mind. To impose such a profession on other men, in matters not absolutely necessary and not absolutely certain, is a criminal usurpation and tyranny over faith and conscience, and which none has power to require but an infallible dictator.

CHAPTER XIX.

OF ENQUIRING INTO CAUSES AND EFFECTS.

SOME effects are found out by their causes, and some causes by their effects. Let us consider both these.

I. When we are enquiring into the causes of any particular effect or appearance, either in the world of nature, or in the civil or moral concerns of men, we may follow this method:

1. Consider what effects or appearances you have known of a kindred nature, and what have been the certain and real causes of them; for like effects have generally like causes, especially when they are found in the same sort of subjects.

2. Consider what are the several possible causes which may produce such an effect: And find out by some circumstances, how many of those possible causes are excluded in this particular case: Thence proceed by degrees to the probable causes, till a more close attention and inspection shall exclude some of them also, and lead you gradually to the real and certain cause.

3. Consider what things preceded such an event or appearance, which might have any influence upon it; and though we cannot certainly determine the cause of any thing only from its going before the effect, yet among the many forerunners, we may probably light upon the true cause, by further and more particular enquiry.

4. Consider whether one cause be sufficient to produce the effect, or whether it does not require a concurrence of several causes; and then endeavour, as far as possible, to adjust the degrees of influence that each cause might have in producing the effect, and the proper agency and influence of each of them therein.

So in natural philosophy, if I would find what are the principles or causes of that sensation which we call heat when I stand near the fire; here I shall find it is necessary that there be an agency of the particles of fire on my flesh, either mediately by themselves, or at least by the intermediate air; there must be a particular sort of motion and vellication impressed upon my nerves; there must be a derivation of that motion to the brain; and there must be an attention of my soul to this motion: If either of these are wanting, the sensation of heat will not be produced.

So in the moral world, if I enquire into the revolution of a state or kingdom, perhaps I find it brought about by the tyranny or folly of a prince, or by the disaffection of his own subjects; and this disaffection and opposition may arise, either upon the account of impositions in religion, or injuries relating to their civil rights: Or the revolution may be effected by the invasion of a foreign army, or by the opposition of some person at home or abroad that lays claim to the government, &c. or a hero who would guard the liberties of the people; or by many of these concurring together; then we must adjust the influences of each as wisely as we can, and not ascribe the whole event to one of them alone.

II. When we are enquiring into the effects of any particular cause or causes, we may follow this method:

1. Consider diligently the nature of every cause apart, and observe what effect every part or property of it will tend to produce.

2. Consider the causes united together in their several natures, and ways of operation; enquire how far the powers or properties of one will hinder or promote the effects of the other, and wisely balance the proportions of their influence.

3. Consider what the subject is, in or upon which the cause is to operate: For the same cause on different subjects will oftentimes produce different effects, as the sun which softens wax will harden clay.

4. Be frequent and diligent in making all proper experiments; in setting such causes at work whose effects you desire to know, and putting together in an orderly manner, such things as are most likely to produce some useful effects, according to the best survey you can take of all the concurring causes and circumstances.

5. Observe carefully all the events which happen, either by an occasional concurrence of various causes, or by the industrious application of knowing men: And when you see any happy effect certainly produced, and often repeated, treasure it up together with the known causes of it, amongst your improvements.

6. Take a just survey of all the circumstances which attend the operation of any cause or causes, whereby any special effect is produced, and find out, as far as possible, how far any of those circumstances had a tendency either to obstruct, or promote, or change those operations, and consequently how far the effect might be influenced by them.

In this manner, physicians practise and improve their skill. They consider the various known effects of particular herbs or drugs, they meditate what will be the effect of their composition, and whether the virtues of the one will exalt or diminish the force of the other, or correct any of its nocent qualities. Then they observe the native constitution, and the present temper or circumstances of the patient, and what is likely to be the effect of such a medicine on such a patient. And in all uncommon cases they make wise and cautious experiments, and nicely observe the effects of particular compound medicines on different constitutions, and in different diseases; and by these treasuries of just observations, they grow up to an honourable degree of skill in the art of healing.

So the preacher considers the doctrines and reasons, the precepts, the promises, and threatenings of the word of God, and what are the natural effects of them upon the mind; he considers what is the natural tendency of such a virtue or such a vice; he is well apprised that the representation of some of these things may convince the understanding, some may terrify the concience, some may allure the slothful, and some encourage the desponding mind: He observes the temper of his hearers, or of any particular person that converses with him about things sacred, and he judges what will be the effects of each representation on such persons; he reviews and recollects what have been the effects of some special parts and methods of his ministry; and by a careful survey of all these, he attains greater degrees of skill in his sacred employment.

Note, In all these cases we must distinguish those causes and effects which are naturally and necessarily connected with each other, from those which have only an accidental or contingent connection. Even in those causes where the effect is but contingent, we may sometimes arrive at a very high degree of probability; yet we cannot arrive at such certainty as where the causes operate by an evident and natural necessity, and the effects necessarily follow the operation.

See more on this subject, Logick, Part II. Chap. V. Sect. 7. Of the principles and rules of judging concerning things past, present, and to come, by the mere use of reason.

CHAPTER XX.

OF THE SCIENCES, AND THEIR USE IN PARTICULAR PROFESSIONS.

1. THE best way to learn any science is to begin with a regular system, or a short and plain scheme of that science, well drawn up into a narrow compass, omitting the deeper and more abstruse parts of it, and that also under the conduct and instruction of some skilful teacher. Systems are necessary to give an entire and comprehensive view of the several parts of any science, which may have a mutual influence toward the explication or proof of each other: Whereas if a man deals always and only in essays and discourses on particular parts of a science, he will never obtain a distinct and just idea of the whole, and may perhaps omit some important part of it after seven years reading of such occasional discourses.

For this reason, young students should apply themselves to their systems much more than pamphlets. That man is never so fit to judge of particular subjects relating to any science, who has never taken a survey of the whole.

It is the remark of an ingenious writer, should a barbarous Indian, who hath never seen a palace or a ship, view their separate and disjointed parts, and observe the pillars, doors, windows, cornices, and turrets of the one, or the prow and stern, the ribs and masts, the ropes and shrouds, the sails and tackle of the other, he would be able to form but a very lame and dark idea of either of those excellent and useful inventions. In like manner, those who contemplate only the fragments or pieces broken off from any science dispersed in short unconnected discourses, and do not discern their relation to each other, and how they may be adapted, and by their union procure the delightful symmetry of a regular scheme, can never survey an entire body of truth, but must always view it as deformed and dismembered; while their ideas, which must be ever indistinct and often repugnant, will lie in the brain unsorted, and thrown together without order or coherence: Such is the knowledge of those men who live upon the scraps of the sciences.

A youth of genius and lively imagination, of an active and forward spirit, may form within himself some alluring scenes and pleasing schemes in the beginning of a science, which are utterly inconsistent with some of the necessary and substantial parts of it, which appear in the middle or the end. And if he never read and pass through the whole, he takes up and is satisfied with own hasty pleasing schemes, and treasures those errors up amongst his solid acquisitions: Whereas his own labour and study, farther pursued, would have shewn him his early mistakes, and cured him of his self-flattering delusions.

Hence it comes to pass, that we have so many half-scholars now-a-days, and there is so much confusion and inconsistency in the notions and opinions of some persons, because they devote their hours of study entirely to short essays and pamphlets, and cast contempt upon systems, under a pretence of greater politeness: Whereas the true reason of this contempt of systematical learning is mere laziness and want of judgment.

II. After we are grown well acquainted with a short system or compendium of a

science which is written in the plainest and most simple manner, it is then proper to read a larger regular treatise on that subject, if we design a complete knowledge and cultivation of it: And either while we are reading this larger system, or after we have done it, then occasional discourses and essays upon the particular subjects and parts of that science may be read with the greatest profit: For in these essays we may often find very considerable corrections and improvements of what these compends, or even the larger systems may have taught us, mingled with some mistakes.

And these corrections or improvements should be as remarks, adjoined by way of note or commentary in their proper places, and superadded to the regular treatise we have read. Then a studious and judicious review of the whole will give us a tolerable acquaintance with that science.

III. It is a great happiness to have such a tutor, or such friends and companions at hand, who are able to inform us what are the best books written on any science, or any special part of it. For want of this advantage, many a man has wasted his time in reading over perhaps some whole volumes, and learned little more by it than to know that those volumes were not worth his reading.

IV. As for the languages, they are certainly best learned in the younger years of life. The memory is then most empty and unfurnished, and ready to receive new ideas continually. We find that children in two years time after they are born, learn to speak their native tongue.

V. The more abstracted sciences, which depend more upon the understanding and judgment, and which deal much in abstracted ideas, should not be imposed upon children too soon; such are logick, metaphysics, ethics, politics, or the depth and difficulties of grammar and criticism. Yet it must be confessed, the first rudiments of grammar are necessary, or at least very convenient to be known when a youth learns a new language; and some general easy principles and rules of morality and divinity are needful, in order to teach a child his duty to God and man; but to enter far into abstracted reasonings on these subjects, is beyond the capacity of children.

VI. There are several of the sciences, that will more agreeably employ our younger years, and the general parts of them may be easily taken in by boys. The first principles and easier practices of arithmetic, geometry, plain trigonometry, measuring heights, depths, lengths, distances, &c. the rudiments of geometry and astronomy, together with something of mechanics, may be easily conveyed into the minds of acute young persons from nine or ten years old and upward. These studies may be entertaining and useful to young ladies as well as to gentlemen, and to all those who are bred up to the learned professions. The fair sex may intermingle those with the operations of the needle, and the knowledge of domestic life. Boys may be taught to join them with their rudiments of grammar, and their labour in the languages. And even those who never learn any language but their mother-tongue may be taught these sciences with lasting benefit in early days.

That this may be done with ease and advantage, take these three reasons:

1. Because they depend so much upon schemes and numbers, images, lines, and figures, and sensible things, that the imagination or fancy will greatly assist the understanding, and render the knowledge of them much more easy.

2. These studies are so pleasant, that they will make the dry labour of learning words, phrases, and languages, more tolerable to boys in a Latin school by this most agreeable

mixture. The employment of youth in these studies will tempt them to neglect many of the foolish plays of childhood, and they will find sweeter entertainment for themselves and their leisure hours by a cultivation of these pretty pieces of alluring knowledge.

3. The knowledge of these parts of science is both easy and worthy to be retained in memory by all children when they come to manly years, for they are useful through all the parts of human life: They tend to enlarge the understanding early, and to give a various acquaintance with useful subjects betimes. And surely it is best, as far as possible, to train up children in the knowledge of those things which they should never forget, rather than to let them waste years of life in trifles, or in hard words which are not worth remembering.

And here, by the way, I cannot but wonder, that any author in our age should have attempted to teach any of the exploded physics of Descartes, or the nobler inventions of Sir Isaac Newton, in his hypothesis of the heavenly bodies and their motions, in his doctrine of light and colours, and other parts of his physiology, or to instruct children in the knowledge of the theory of the heavens, earth, and planets, without any figures or diagrams. Is it possible to give a boy or a young lady the clear, distinct and proper apprehensions of these things without lines and figures to describe them? Does not their understanding want the aid of fancy and images to convey stronger and juster ideas of them to the inmost soul? Or do they imagine that youth can penetrate into all these beauties and artifices of nature without these helps, which persons of maturer age find necessary for that pursose? I would not willingly name the books, because some of the writers are said to be gentlemen of excellent acquirements.

VII. After we have first learned and gone through any of those arts or sciences which are to be explained by diagrams, figures, and schemes, such as geometry, geography, astronomy, optics, mechanics, &c. we may best preserve them in memory by having those schemes and figures in large sheets of paper hanging always before the eye in closets, parlours, halls, chambers, entries, stair-cases, &c. Thus the learned images will be perpetually impressed on the brain, and will keep the learning that depends upon them alive and fresh in the mind, through the growing years of life: The mere diagrams and figures will never recal to our thoughts those theorems, problems, and corollaries, which have been demonstrated by them.

It is incredible how much geography may be learned this way by the two terrestrial hemispheres, and by particular maps and charts of the coasts and countries of the earth, happily disposed round about us. Thus we may learn also the constellations by just projections of the celestial sphere, hung up in the same manner. And I must confess, for the bulk of learners of astronomy, I like that projection of the stars best, which includes in it all the stars in our horizon, and therefore it reaches to the $38\frac{1}{2}$ degree of southern latitude, though its centre is the north-pole. This gives us a better view of the heavenly bodies as they appear every night to us, and it may be made use of with a little instruction, and with ease, to serve for a nocturnal, and shew the true hour of the night.

But remember, that if there be any colouring upon these maps or projections, it should be laid on so thin, as not to obscure or conceal any part of the lines, figures, or letters: Whereas most times they are daubed so thick with gay and glaring colours, and hung up so high above the reach of the eye that should survey and read them, as

though their only design were to make a gaudy show upon the wall, and they hung there merely to cover the naked plaster or wainscot.

Those sciences which may be drawn out into tables may also be thus hung up and disposed in proper places, such as brief abstracts of history, chronology, &c. and indeed, the schemes of any of the arts or sciences may be analysed in a sort of skeleton, and represented upon tables, with the various dependencies and connections of their several parts and subjects that belong to them. Mr. Solomon Lowe has happily thrown the grammar of several languages into such tables; and a frequent review of these abstracts and epitomes would tend much to imprint them on the brain, when they have been once well learned; this would keep those learned traces always open, and assist the weakness of a labouring memory. In this manner may a scheme of the scripture history be drawn out, and perpetuate those ideas in the mind with which our daily reading furnishes us.

VIII. Every man who pretends to the character of a scholar, should attain some general and superficial idea of most or all the sciences: For there is a certain connection among the various parts of human knowledge, so that some notions borrowed from any one science may assist our acquaintance with any other, either by way of explication, illustration, or proof: Though there are some sciences conjoined by a much nearer affinity than others.

IX. Let those parts of every science be chiefly studied at first, and reviewed afterwards, which have a more direct tendency to assist our proper profession, as men, or our general profession as Christians, always observing what we ourselves have found most necessary and useful to us in the course of our lives. Age and experience will teach us to judge which of the sciences, and which parts of them, have been of greatest use, and are most valuable; but in younger years of life we are not sufficient judges of this matter, and therefore should seek advice from others who are elder.

X. There are three learned professions among us, *viz.* divinity, law, and medicine. Though every man, who pretends to be a scholar or a gentleman, should so far acquaint himself with a superficial scheme of all the sciences, as not to stand amazed like a mere stranger at the mention of the common subjects that belong to them; yet there is no necessity for every man of learning to enter into their difficulties, and deep recesses, nor to climb the heights to which some others have arrived. The knowledge of them in a proper measure may be happily useful to every profession, not only because all arts and sciences have a sort of communion and connection with each other, but it is an angelic pleasure to grow in knowledge, it is a matter of honour and esteem, and renders a man more agreeable and acceptable in every company.

But let us survey several of them more particularly, with regard to the learned professions: And first of the mathematics.

XI. Though I have so often commended mathematical studies, and particularly the speculations of arithmetic and geometry, as a means to fix a wavering mind, to beget a habit of attention, and to improve the faculty of reason; yet I would by no means be understood to recommend to all a pursuit of these sciences, to those extensive lengths to which the moderns have advanced them. This is neither necessary nor proper for any students, but those few who shall make these studies their chief profession and business of life, or those gentlemen whose capacities and turn of mind are suited to these studies, and have all manner of advantage to improve in them.

The general principles of arithmetic, algebra, geometry, and trigonometry, of geography, of modern astronomy, mechanics, statics, and optics, have their valuable and excellent uses, not only for the exercise and improvement of the faculties of the mind, but the subjects themselves are very well worth our knowledge in a moderate degree, and are often made of admirable service in human life. So much of these subjects as Dr. Wells has given us in his three volumes, intitled, *The Young Gentleman's Mathematics*, is richly sufficient for the greatest part of scholars or gentlemen; though perhaps there may be some single treatises, at least on some of these subjects, which may be better written and more useful to be perused than those of that learned author.

But a penetration into the abstruse difficulties and depths of modern algebra and fluxions, the various methods of quadratures, the mensuration of all manner of curves, and their mutual transformation, and twenty other things that some modern mathematicians deal in, are not worth the labour of those who design either of the three learned professions, divinity, law, or physic, as the business of life. This is the sentence of a considerable man, *viz.* Dr. George Cheyne, who was a very good proficient and writer on these subjects: He affirms, that they are but barren and airy studies for a man entirely to live upon, and that for a man to indulge and riot in these exquisitely bewitching contemplations, is only proper for public professors, or for gentlemen of estates, who have a strong propensity this way, and a genius fit to cultivate them.

But, says he, to own a great but grievous truth, though they may quicken and sharpen the invention, strengthen and extend the imagination, improve and refine the reasoning faculty, and are of use both in the necessary and the luxurious refinement of mechanical arts; yet, having no tendency to rectify the will, to sweeten the temper, or mend the heart, they often leave a stiffness, a positiveness and sufficiency on weak minds, which is much more pernicious to society, and to the interests of the great end of our being, than all their advantages can recompense. He adds further, concerning the launching into the depth of these studies, that they are apt to beget a secret and refined pride, and over-weening and over-bearing vanity, the most opposite temper to the true spirit of the gospel. This tempts them to presume on a kind of omniscience in respect to their fellow creatures, who have not risen to their elevation: Nor are they fit to be trusted in the hands of any but those who have acquired a humble heart, a lowly spirit, and a sober and teachable temper. See Dr. Cheyne's Preface to his *Essay on Health and long Life.*

XII. Some of the practical parts of geometry, astronomy, dialling, optics, statics, mechanics, &c. may be agreeable entertainments and amusements to students in every profession at leisure hours, if they enjoy such circumstances of life as to furnish them with conveniences for this sort of improvement: But let them take great care, lest they entrench upon more necessary employments, and so fall under the charge and censure of wasted time.

Yet I cannot help making this observation, that where students, or indeed any young gentlemen, have in their early years made themselves masters of a variety of elegant problems in the mathematic circle of knowledge, and gained the most easy, neat, and entertaining experiments in natural philosophy, with some short and agreeable speculations or practices in any other of the arts or sciences, they have hereby laid a foundation for the esteem and love of mankind among those with whom they converse, in higher or lower ranks of life; they have been often guarded by this means from the temptation of nocent pleasures, and have secured both their own hours and the hours of their

companions, from running to waste in sauntering and trifles, and from a thousand impertinences in silly dialogues. Gaming and drinking, and many criminal and foolish scenes of talk and action, have been prevented by these innocent and improving elegancies of knowledge.

XIII. History is a necessary study in the supreme place for gentlemen who deal in politics. The government of nations, and distressful and desolating events which have in all ages attended the mistakes of politicians, should be ever present on their minds, to warn them to avoid the like conduct. Geography and chronology, which precisely inform us of the place and time where such transactions or events happened, are the eyes of history, and of absolute necessity in some measure to attend it.

But history, so far as relates to the affairs of the Bible, is as necessary to divines as to gentlemen of any profession. It helps us to reconcile many difficulties in scripture, and demonstrates a divine providence. Dr. Prideaux's *Connection of the Old and New Testament* is an excellent treatise of this kind.

XIV. Among the smaller histories, biography, or the memoirs of the lives of great and good men, has a high rank in my esteem, as worthy of the perusal of every person who devotes himself to the study of divinity. Therein we frequently find our holy religion reduced to practice, and many parts of Christianity shining with a transcendent and exemplary light. We learn there how deeply sensible great and good men have been of the ruins of human nature by the first apostacy from God, and how they have toiled and laboured, and turned themselves on all sides, to seek a recovery, in vain, till they have found the gospel of Christ an all-sufficient relief. We are there furnished with effectual and unanswerable evidences that the religion of Jesus, with all its self-denials, virtues, and devotions, is a very practicable thing, since it has been carried to such a degree of honour by some wise and holy men. We have been there assured, that the pleasures and satisfaction of the christian life, in its present practice and its future hopes, are not the mere raptures of fancy and enthusiasm, when some of the strictest professors of reason have added the sanction of their testimony.

In short, the lives or memoirs of persons of piety, well written, have been of infinite and unspeakable advantage to the disciples and professors of Christianity, and have given as admirable instances and rules how to resist every temptation of a soothing or a frowning world, how to practise important and difficult duties, how to love God above all, and to love our neighbours as ourselves, to live by the faith of the Son of God, and to die in the same faith, in sure and certain hope of a resurrection to eternal life.

XV. Remember that logick and ontology, or metaphysics, are necessary sciences, though they have been greatly abused by scholastic writers who have professed to teach them in former ages. Not only all students, whether they design the profession of theology, law, or physic, but all gentlemen should at least acquire a superficial knowledge of them. The introduction of so many subtleties, nice distinctions, and insignificant terms without clear ideas, has brought a great part of the logick and metaphysics of the schools into just contempt. Their logick has appeared the mere art of wrangling, and their metaphysics the skill of splitting a hair, of distinguishing without a difference, and of putting long hard names upon common things, and sometimes upon a confused jumble of things which have no clear ideas belonging to them.

It is certain, that an unknown heap of trifles and impertinences have been intermingled

with these useful parts of learning, upon which account many persons in this polite age have made it a part of their breeding to throw a jest upon them; and to rally them well, has been esteemed a more valuable talent than to understand them.

But this is running into wide extremes; nor ought these parts of science to be abandoned by the wise, because some writers of former ages have played the fool with them. True logick teaches us to use our reason well, and brings a light into the understanding: True metaphysics, or ontology, casts a light upon all the objects of thought and meditation, by ranging every being with all the absolute and relative perfections and properties, modes and attendants of it in proper ranks or classes, and thereby it discovers the various relations of things to each other, and what are their general or special differences from each other, wherein a great part of human knowledge consists. And by this means it greatly conduces to instruct us in method, or the disposition of every thing into its proper rank and class of beings, attributes, or actions.

XVI. If I were to say any thing of natural philosophy, I would venture to lay down my sentiments thus:

I think it must needs be very useful to a divine to understand something of natural science. The mere natural history of birds, beasts, and fishes, of insects, trees, and plants, as well as of meteors, such as clouds, thunders, lightnings, snow, hail, frost, &c. in all their common or uncommon appearances, may be of considerable use to one who studies divinity, to give him a wider and more delightful view of the works of God, and to furnish him with lively and happy images and metaphors drawn from the large volume of nature, to display and represent the things of God and religion in the most beautiful and affecting colours.

And if the mere history of these things be useful for this purpose, surely it will be of further advantage to be led into the reasons, causes, and effects of these natural objects and appearances, and to know the established laws of nature, matter, and motion, whereby the great God carries on his extensive works of providence from the creation to this day.

I confess, the old Aristotelean scheme of this science will teach us very little that is worth the knowing about these matters; but the later writers, who have explained nature and its operations in a more sensible and geometrical manner, are well worth the moderate study of a divine: Especially those who have followed the principles of that wonder of our age and nation, Sir Isaac Newton. There is much pleasure and entertainment, as well as real profit, to be derived from those admirable improvements which have been advanced in natural philosophy of late years, by the assistance of mathematical learning, as well as from the multitude of experiments which have been made, and are still making in natural subjects.

XVII. This is a science which indeed eminently belongs to the physician: He ought to know all the parts of human nature, what are the sound and healthy functions of an animal body, and what are the distempers and dangers which attend it; he should also be furnished with a large knowledge of plants and minerals, and every thing which makes up the *materia medica*, or the ingredients of which medicines are made; and many other things in natural philosophy are subservient to his profession, as well as to the kindred art of surgery.

XVIII. Questions about the powers and operations of nature may also sometimes come into the lawyer's cognizance, especially such as relate to assaults, wounds, murders,

&c. I remember, I have read a trial of a man for murder by drowning, wherein the judge on the bench heard several arguments concerning the lungs being filled or not filled with water, by inspiration or expiration, &c. to all which he professed himself so much a stranger, as did not do him any great honour in public.

XIX. But I think no divine, who can obtain it, should be utterly destitute of this knowledge. By the assistance of this study, he will be better able to survey the various monuments of creating wisdom in the heavens, the earth, and the seas, with wonder and worship: And by the use of a moderate skill in this science, he may communicate so much of the astonishing works of God in the formation and government of this visible world, and so far instruct many of his hearers, as may assist the transfusion of the same ideas into their minds, and raise them to the same delightful exercises of devotion. "O Lord, how manifold are thy works! In wisdom hast thou made them all! They are sought out by all that have pleasure in them."

Besides, it is worthy of the notice of every student in theology, that he ought to have some acquaintance with the principles of nature, that he may judge a little how far they will go; so that he may not be imposed upon to take every strange appearance in nature for a miracle, that he may reason the clearer upon this subject, that he may better confirm the miracles of Moses and of Christ, nor yield up his faith to any pretences of prodigy and wonder, which are either the occasional and uncommon operations of the elements, or the crafty sleights of men well skilled in philosophy and mechanical operations, to delude the simple.

XX. The knowledge also of animal nature and of the rational soul of man, and the mutual influence of these two ingredients of our composition upon each other, is worthy the study of a divine. It is of great importance to persons of this character and office, to judge how far the animal powers have influence upon such and such particular appearances and practices of mankind; how far the appetites or passions of human nature are owing to the flesh and blood, or to the mind; how far they may be moderated, and how far they ought to be subdued; and what are the happiest methods of obtaining these ends. By this science also we may be better informed, how far these passions or appetites are lawful, and how far they are criminal, by considering how far they are subject to the power of the will, and how far they may be changed and corrected by our watchfulness, care, and diligence.

It comes also very properly under the cognizance of this profession, to be able in some measure to determine questions which may arise relating to real inspiration or prophecy, to wild enthusiasm, to fits of a convulsive kind, to melancholy or phrenzy, &c. and what directions are proper to be given concerning any appearances of this nature.

XXI. Next to the knowledge of natural things, and acquaintance with the human nature and constitution, which is made up of soul and body, I think natural religion properly takes its place. This consists of these two parts, *viz.* 1. The speculative or contemplative, which is the knowledge of God in his various perfections, and in his relations to his rational creatures, so far as may be known by the light of nature, which heretofore used to be called the second part of metaphysics. It includes also, 2. That which is practical or active, which is the knowledge of the several duties that arise from our relation to God, and our relation to our fellow-creatures, and our proper conduct and government of ourselves: This has been used to be called ethics, or moral philosophy.

XXII. The knowledge of these things is proper for all men of learning; not only because it teaches them to obtain juster views of the several parts of revealed religion, and of Christianity, which are built upon them, but because every branch of natural religion and of moral duty is contained, and necessarily implied in all the revealed religions that ever God prescribed to the world. We may well suspect that religion does not come from God, which renounces any part of natural duty.

Whether mankind live under the dispensation of the Patriarchs, or of Moses, or the prophets, or of our Lord Jesus Christ, still we are bound to know the one true God, and to practise all that adoration and reverence, all that love to him, that faith in his perfections, with that obedience and submission to his will, which natural religion requires. We are still bound to exercise that justice, truth, and goodness towards our neighbours, that restraint and moderation of our own appetites and passions, and that regular behaviour towards ourselves and all our fellow-creatures around us, which moral philosophy teaches. There is no sort of revealed religion that will dispense with these natural obligations: And a happy acquaintance with the several appetites, inclinations, and passions of human nature, and the best methods to rule and restrain, to direct and govern them, are our constant business, and ought to be our everlasting study.

Yet I would lay down this caution, *viz.* That since students are instructed in the knowledge of the true God in their lectures on Christianity, and since among the christian duties they are also taught all the moral dictates of the light of nature, or a complete scheme of ethics, there is no absolute necessity of learning these two parts of natural religion, as distinct sciences, separate and by themselves; but still it is of great importance for a tutor, while he is reading to his pupils these parts of the christian religion, to give them notice how far the light of nature or mere reason will instruct us in these doctrines and duties, and how far we are obliged to divine revelation and scripture, for clearing up and establishing the firm foundations of the one, for affording us superior motives and powers to practise the other, for raising them to more exalted degrees, and building so glorious a superstructure upon them.

XXIII. The study of natural religion, *viz.* The knowledge of God and the rules of virtue and piety, as far as they are discovered by the light of nature, is needful indeed to prove the truth of divine revelation or scripture, in the most effectual manner: But after the divine authority of scripture is established, that will be a very sufficient spring from whence the bulk of mankind may derive their knowledge of divinity or the christian religion, in order to their own present faith and practice, and their future and eternal happiness. In this sense theology is a science necessary for every one that hopes for the favour of God and the felicity of another world; and it is of infinitely more importance than any of the arts and sciences, which belong to any of the learned professions here on earth.

XXIV. Perhaps it will be thought necessary I should say something concerning the study of the civil law, or the law of nature and nations.

If we would speak with great justness and propriety, the civil law signifies the peculiar law of each, state, country, or city: But what we now usually mean by the civil law, is a body of laws composed out of the best of the Roman and Grecian laws, and which was in the main received and observed through all the Roman dominions for above twelve hundred years.

The Romans took the first grounds of this law from what they call the twelve tables,

which were the abridgments of the laws of Solon at Athens, and of other cities in Greece, famous for knowledge and wisdom; to which they added their own ancient customs of the city of Rome, and the laws which were made there. These written laws were subject to various interpretations, whence controversies daily arising, they were determined by the judgment of the learned; and these determinations were what they first called *jus civile*. All this by degrees grew to a vast number of volumes; and therefore the emperor Justinian commanded his chancellor Tribonian to reduce them to a perfect body, and this is called the body of the civil law.

XXV. But that which is of most importance for all learned men to be acquainted with, is the law of nature, or the knowledge of right and wrong among mankind, whether it be transacted between single persons or communities, so far as common reason and the light of nature dictate and direct. This is what Puffendorf calls the law of nature and nations, as will appear if you consult Sect. III. Chap. III. of that most valuable folio he has written on the subject; which is well worthy the study of every man of learning, particularly lawyers and divines, together with other treatises on the same theme.

If any question proposed relate to right and property, and justice between man and man, in any polite and civilized country, though it must be adjudged chiefly according to the particular statutes and laws of that country, yet the knowledge of the law of nature will very considerably assist the lawyer and the civil judge in the determination thereof. And this knowledge will be of great use to divines, not only in deciding of cases of conscience among men, and answering any difficult enquiries which may be proposed to them on this subject, but it will greatly assist them also in their studies relating to the law of God, and the performance or violation thereof, the nature of duty and sin, reward and punishment.

XXVI. I have spoken something of the languages before, but let me here resume the subject, and put in a few thoughts about those studies which are wont to be called philological; such as history, languages, grammar, rhetoric, poesy, and criticism.

An acquaintance with some of the learned languages at least, is necessary for all the three learned professions.

XXVII. The lawyers, who have the least need of foreign tongues, ought to understand Latin. During many ages past, very important matters in the law were always written and managed in that language by the lawyers, as prescriptions in medicine by the physicians, and citations of the scriptures in divinity were always made in Latin by the divines. Prayers also were ordained to be said publicly and privately in the Roman tongue: Pater-nosters and Ave-marias were half the devotion of those ages. These cruel impositions upon the people would not suffer them to read in their own mother-tongue what was done, either to or for their own souls, their bodies, or their estates. I am ready to suspect this was all owing to the craft and policy of the priesthood and church of Rome, which endeavoured to aggrandize themselves, and exalt their own profession into a sovereign tyranny, and to make mere slaves of the laity among mankind, by keeping them in utter ignorance, darkness, and dependence. And they were willing to compound the matter with the physicians and the lawyers, and allow them a small share in this tyranny over the populace, to maintain their own supreme dominion over all.

But, we thank God, the world is grown something wiser; and of late years, the

British Parliament has been pleased to give relief from that bondage in matters relating to the law also, as in the age of the reformation we were delivered from saying our prayers in Latin, from being bound to read the word of God in a tongue unknown to the people, and from living in an everlasting subjection to the clergy in matters of this life and the life to come.

But to return. There are still so many forms of proceedings in judicature, and things called by Latin names in the profession of the law, and so many barbarous words with Latin terminations, that it is necessary lawyers should understand this language. Some acquaintance also with the old French tongue is needful for the same persons and profession, since the *Tenures* of Lyttleton, which are a sort of Bible to the gentlemen of the long robe, were written in that language: And this tongue has been interwoven in some forms of the English law, from the days of William the Conqueror, who came from Normandy in France.

XXVIII. Physicians should be skilled in the Greek as well as in the Latin, because their great master Hippocrates wrote in that tongue, and his writings are still of good value and use. A multitude of the names, both of the parts of the body, of diseases, and of medicines, are derived from the Greek language: And there are many excellent books of physic, both in the theoretical and practical parts of it, which are delivered to the world in the Roman tongue, and of which that profession should not be ignorant.

XXIX. Such as intend the study of theology should be well acquainted also with the Latin, because it has been for many hundred years the language of the schools of learning: Their disputations are generally limited to that language, and many excellent books of divinity must be entirely concealed from the students, unless they are acquainted with Latin authors.

But those that design the sacred profession of theology should make it their labour of chief importance to be very conversant with their Bibles, both in the Old and New Testament: And this requires some knowledge of those original languages, Greek and Hebrew, in which the scriptures were written. All that will pursue these studies with honour should be able to read the Old Testament tolerably in the Hebrew tongue: At least they should be so far acquainted with it, as to find out the sense of a text by the help of a dictionary. But scarce any man should be thought worthy of the name of a solid divine, or a skilful teacher of the gospel, in these days of light and liberty, unless he has pretty good knowledge of the Greek, since all the important points of the christian religion are derived from the New Testament, which was first written in that language.

XXX. As for the Syriac and Arabic tongues, if one divine in thirty, or in three hundred, travel far into these regions, it is enough. A few learned men skilled in these languages will make sufficient remarks upon them for the service of the whole christian world; which remarks may sometimes happen to be of use to those divines who are unacquainted with them in reading the Bible. But the advantage of these tongues is not of so great importance as it has been too often represented. My reader will agree with me when he considers, that the chief uses of them are these:

The Arabic is a language which has some kindred and affinity to the Hebrew, and perhaps we may now and then guess at the sense of some uncommon and doubtful Hebrew word, which is found but once or twice in the Bible, by its supposed affinity to the Arabic: But whatsoever conjectures may be made by some kindred of a Hebrew

word to an Arabic root, yet there is no certainty to be gathered from it, for even words of the same language which are undoubtedly derived from the same theme or primitive, will give us but very doubtful and sorry information concerning the true sense of kindred words which spring from the same theme.

Let me give a plain instance or two of this uncertainty. The word *strages* signifies slaughter; *stratum* is Latin for a bed; *stramen* is straw; and *stragulum* is a quilt or coverlet: They are all drawn and derived from *sterno*, which signifies to throw down, to kill, or to spread abroad. Let the critics tell me what certain sense they could put upon either of these four words by their mere cognation with each other, or their derivation from one common verb. Again, who could tell me the certain meaning and precise idea of the word *honest* in English, and assure me that it signifies a man of integrity, justice, and probity, though it is evidently derived from *honestus* in Latin? Whereas *honestus* hath a very different idea, and signifies a man of some figure in the world, or a man of honour. Let any man judge then, how little service toward explaining the Hebrew tongue can be furnished from all the language of Arabia. Surely a great part of the long learned fatigues and tiresome travels of men through this country, is almost vain and useless to make the Hebrew Bible better understood.

As for the Syriac language, it is granted there may be some small advantage drawn from the knowledge of it, because there is a very ancient translation of the New Testament in that tongue: And perhaps this may sometimes give a proper and apposite meaning to a difficult and doubtful text, and offer a fair hint for recovering the true meaning of the scripture from the perverse glosses of other writers. But there are several commentators and lexicographers who have been acquainted with the Syriac language, and have given us the chief of these hints in their writings on scripture.

And after all, since none of these assistances can yield us a sufficient proof of a true interpretation, and give us the certain sense of a text, who would be persuaded to waste any great number of his better hours in such dry studies, and in labours of so little profit?

XXXI. The Chaldean language, indeed, is much nearer to the Hebrew, and it is proper for a divine to have some acquaintance with it, because there are several verses or chapters of Ezra and Daniel which are written in that language; and the old jewish targums or commentaries, which are written in the Chaldean tongue, may sometimes happen to cast a little light upon a doubtful scripture of the Old Testament.

But it must be still owned, that the knowledge of the Eastern tongues does not deserve to be magnified to such a degree, as some of the proficients in them have indulged; wherein they have carried matters beyond all reason and justice, since scarcely any of the most important subjects of the gospel of Christ and the way of salvation can gain any advantage from them.

XXXII. The art of grammar comes now to be mentioned. It is a distinct thing from the mere knowledge of the languages; for all mankind are taught from their infancy to speak their mother-tongue, by a natural imitation of their mothers and nurses, and those who are round about them, without any knowledge of the art of grammar, and the various observations and rules that relate to it. Grammar, indeed, is nothing else but rules and observations drawn from the common speech of mankind in their several languages; and it teaches us to speak and pronounce, to spell and write with propriety and exactness, according to the custom of those in every nation who are, or

were supposed to speak and write their own language best. Now it is a shame for a man to pretend to science and study in any of the three learned professions, who is not in some measure acquainted with the propriety of those languages with which he ought to be conversant in his daily studies, and more especially in such as he may sometimes be called upon to write as well as read.

XXXIII. Next to grammar, we proceed to consider rhetoric.

Now rhetoric, in general, is the art of persuading, which may be distinguished into these three parts, *viz.* 1. Conveying the sense of the speaker to the understanding of the hearers in the clearest and most intelligent manner, by the plainest expressions and the most lively and striking representations of it, so that the mind may be thoroughly convinced of the thing proposed. 2. Persuading the will effectually to choose or refuse the thing suggested and represented. 3. Raising the passions in the most vivid and forcible manner, so as to set all the soul and every power of nature at work to pursue or avoid the thing in debate.

To attain this end, there is not only a great deal of art necessary in the representation of matters to the auditory, but also in the disposition or method of introducing these particular representations, together with the reasons which might convince, and the various methods which might persuade and prevail upon the hearers. There are certain seasons, wherein a violent torrent of oration in a disguised and concealed method may be more effectual than all the nice forms of logick and reasoning. The figures of interrogation and exclamation have sometimes a large place and happy effect in this sort of discourse, and no figure of speech should be wanting here, where the speaker has art enough happily to introduce it.

There are many remarks and rules laid down by the teachers of this art, to improve a young genius into those glorious talents whereby Tully and Demosthenes acquired that amazing influence and success in their own age and nation, and that immortal fame through all nations and ages. And it is with great advantage these rules may be perused and learned. But a happy genius, a lively imagination, and warm passions, together with a due degree of knowledge and skill in the subject to be debated, and a perpetual perusal of the writings of the best orators, and hearing the best speakers, will do more to make an orator, than all the rules of art in the world without these natural talents and this careful imitation of the most approved and happiest orators.

XXXIV. Now you will presently suppose, that pleaders at the bar have great need of this art of rhetoric; but it has been a just doubt, whether pleading in our British courts of justice, before a skilful judge, should admit of any other aid from rhetoric, than that which teaches to open a cause clearly, and spread it in the most perspicuous, complete, and impartial manner before the eyes of him that judges; for impartial justice being the thing which is sought, there should be no artifices used, no eloquence or powers of language employed to persuade the will, or work upon the passions, lest the decisive sentence of the judge should be biassed or warped into injustice. For this reason, Mr. Locke would banish all pleaders in the law for fees, out of his government of Carolina, in his posthumous works; though perhaps that great man might possibly be too severe in so universal a censure of the profession.

XXXV. But the case is very different with regard to divines: The eloquence of the pulpit, beyond all controversy, has a much larger extent.

Their business is not to plead a cause of right and wrong before a wise and skilful,

judge, but to address all the ranks of mankind, the high and low, the wise and the unwise, the sober and the vicious, and persuade them all to pursue and persevere in virtue with regard to themselves, in justice and goodness with regard to their neighbours, and piety towards God. These are affairs of everlasting importance, and most of the persons to whom these addresses are made, are not wise and skilful judges, but are influenced and drawn strongly to the contrary side by their own sinful appetites and passions, and bribed or biassed by the corrupt customs of the world.

There is therefore a necessity not only of a clear and faithful representation of things to men, in order to convince their reason and judgment, but of all the skill and force of persuasion addressed to the will and the passions. So Tully addressed the whole senate of Rome, and Demosthenes the Athenian people, among whom were capacities and inclinations of infinite variety; and therefore they made use of all the lightning and thunder, all the entreaties and terrors, all the soothing elegancies and the flowery beauties of language which their art could furnish them with. Divines in the pulpit have much the same sort of hearers, and therefore they should imitate those ancient examples. The understanding, indeed, ought to be first convinced, by the plainest and strongest force of reasoning; but when this is done, all the powerful motives should be used which have any just influence upon human nature, all the springs of passion should be touched, to awaken the stupid and the thoughtless into consideration, to penetrate and melt the hardest heart, to persuade the unwilling, to excite the lazy, to reclaim the obstinate, and reform the vicious part of mankind, as well as to encourage those who are humble and pious, and to support their practice and their hope. The tribes of men are sunk into so fatal a degeneracy and dreadful distance from God, and from all that is holy and happy, that all the eloquence which a preacher is master of should be employed, in order to recover the world from its shameful ruin and wretchedness by the gospel of our blessed Saviour, and restore it to virtue and piety, to God and happiness, by the divine power of this gospel. O may such glorious masters of sacred oratory never be wanting in the pulpits of Great Britain!

XXXVI. Shall I now speak something of my sentiments concerning poesy?

As for books of poesy, whether in the learned or in the modern languages, they are of great use to be read at hours of leisure, by all persons that make any pretence to good education or learning: And that for several reasons:

1. Because there are many couplets or stanzas written in poetic measures, which contain a variety of morals, or rules of practice relating to the common prudentials of mankind, as well as to matters of religion; and the poetic numbers, or rhyme, if there be any, add very considerable force to the memory.

Besides, many an elegant and admirable sentiment or description of things which are found among the poets, are well worth committing to memory, and the particular measures of verse greatly assist us in recollecting such excellent passages, which might sometimes raise our conversation from low and grovelling subjects.

2. In heroic verse, but especially in the grander lyrics, there are sometimes such noble elevations of thought and passion as illuminate all things around us, and convey to the soul most exalted and magnificent images and sublime sentiments: These furnish us with glorious springs and mediums to raise and aggrandize our conceptions, to warm our souls, to awaken the better passions, and to elevate them even to a divine pitch, and

that for devotional purposes. It is the lyric ode which has shewn to the world some of the happiest examples of this kind, and I cannot say but this part of poesy has been my favourite amusement above all others.

And for this reason it is that I have never thought the heroic poems, Greek, Latin, nor English, which have obtained the highest fame in the world, are sufficiently diversified, exalted, or animated, for want of the interposition of now and then an elegiac or a lyric ode. This might have been done with great and beautiful propriety, where the poet has introduced a song at a feast, or the joys of a victory, or the soliloquies of divine satisfaction, or the pensive and despairing agonies of distressing sorrow. Why should that which is called the most glorious form of poesy, be bound down and confined to such a long and endless uniformity of measures, when it should kindle or melt the soul, swell or sink it into all the various and transporting changes of which human nature is capable?

Cowley, in his unfinished fragment of the *Davideis*, has shewn us this way to improvement; and whatever blemishes may be found in other parts of that heroic essay, this beauty and glory of it ought to be preserved for imitation. I am well assured, that if Homer and Virgil had happened to practise it, it would have been renowned and glorified by every critic. I am greatly mistaken, if this wise mixture of numbers would not be a further reach of perfection than they have ever attained to without it: Let it be remembered, that it is not nature and strict reason, but a weak and awful reverence for antiquity and the vogue of fallible men, that has established those Greek and Roman writings as absolute and complete patterns. In several ages there have been some men of learning, who have very justly disputed this glory, and have pointed to many of their mistakes.

3. But still there is another end of reading poesy, and perhaps the most considerable advantage to be obtained from it by the bulk of mankind, and that is, to furnish our tongues with the richest and the most polite variety of phrases and words upon all occasions of life or religion. He that writes well in verse will often find a necessity to send his thoughts in search through all the treasure of words that express any one idea in the same language, that so he may comport with the measures, or the rhyme of the verse which he writes, or with his own most beautiful and vivid sentiments of the thing he describes. Now by much reading of this kind we shall insensibly acquire the habit and skill of diversifying our phrases upon all occasions, and of expressing our ideas in the most proper and beautiful language, whether we write or speak of the things of God or men.

It is pity that some of these harmonious writers have ever indulged any thing uncleanly or impure to defile their paper, and abuse the ears of their readers, or to offend against the rules of the nicest virtue and politeness: But still amongst the writings of Mr. Dryden and Mr. Pope, and Dr. Young, as well as others, there is a sufficient choice in our own language, wherein we shall not find any indecency to shock the most modest tongue or ear.

Perhaps there has hardly been a writer in any nation, and, I may dare to affirm, there is none in ours, has a richer and happier talent of painting to the life, or has ever discovered such a large and inexhausted variety of description as the celebrated Mr. Pope. If you read his translation of Homer's Iliad, you will find almost all the terms or phrases in our tongue that are needful to express any thing that is grand or magnificent: But if

you peruse his Odyssey, which descends much more into common life, there is scarcely any usual subject of discourse or thought, or any ordinary occurrence, which he has not cultivated and dressed in the most proper language; and yet still he has ennobled and enlivened even the lower subjects with the brightest and most agreeable ornaments.

I should add here also, that if the same author had more frequently employed his pen on divine themes, his short poem on the Messiah, and some part of his letters between Abelard and Eloisa, with that ode of the dying Christian, &c. sufficiently assures us, that his pen would have honourably imitated some of the tender scenes of penitential sorrow, as well as the sublimer odes of the Hebrew Psalmist; and perhaps discovered to us in a better manner than any other translation has done, how great a poet sat upon the throne of Israel.

4. After all that I have said, there is yet a further use of reading poesy, and that is, when the mind has been fatigued with studies of a more laborious kind, or when it is any ways unfit for the pursuit of more difficult subjects, it may be as it were unbent, and repose itself a while on the flowery meadows where the muses dwell. It is a very sensible relief to the soul when it is over-tired, to amuse itself with the numbers and the beautiful sentiments of the poets; and in a little time, this agreeable amusement may recover the languid spirits to activity and more important service.

XXXVII. All this I propose to the world as my best observations about reading of verse. But if the question were offered to me, shall a student of a bright genius never divert himself with writing poesy? I would answer, Yes, when he cannot possibly help it: A lower genius in mature years would heartily wish that he had spent much more time in reading the best authors of this kind, and employed much fewer hours in writing. But it must be confessed, or supposed at least, that there may be seasons, when it is hardly possible for a poetic soul to restrain the fancy or quench the flame, when it is hard to suppress the exuberant flow of lofty sentiments, and prevent the imagination from this sort of style or language: And that is the only season, I think, wherein this inclination should be indulged; especially by persons who have devoted themselves to professions of a different kind: And one reason is because what they write in that hour, is more likely to carry in it some appearance above nature, some happy imitation of the dictates of the muse*.

XXXVIII. There are other things besides history, grammar and languages, rhetoric and poesy, which have been included under the name of philological knowledge; such as, an acquaintance with the notions, customs, manners, tempers, polity, &c. of the various nations of the earth, or the distinct sects and tribes of mankind. This is necessary, in order to understand history the better; and every man who is a lawyer or a gentleman, ought to obtain some acquaintance with these things, without which he can never read history to any great advantage, nor can he maintain his own station and character in life with honour and dignity, without some insight into them.

XXXIX. Students in divinity ought to seek a larger acquaintance with the jewish laws, polity, customs, &c. in order to understand many passages of the Old Testa-

* The muse, in the ancient heathen sense, is supposed to be a goddess; but in the philosophic sense, it can mean no more than a bright genius with a warm and strong imagination, elevated to an uncommon degree.

ment and the New, and to vindicate the sacred writers from the reproaches of infidels. An acquaintance also with many of the Roman and Grecian affairs is needful to explain several texts of scripture in the New Testament, to lead sincere enquirers into the true and genuine sense of the evangelists and apostles, and to guard their writings from the unreasonable cavils of men.

XL. The art of criticism is reckoned by some as a distinct part of philology; but it is in truth nothing else than a more exact and accurate knowledge or skill in the other parts of it, and a readiness to apply that knowledge upon all occasions, in order to judge well of what relates to these subjects, to explain what is obscure in the authors which we read, to supply what is defective, and amend what is erroneous in manuscripts or ancient copies, to correct the mistakes of authors and editors in the sense of the words, to reconcile the controversies of the learned, and by this means to spread a juster knowledge of these things among the inquisitive part of mankind.

Every man who pretends to the learned professions, if he doth not arise to be a critic himself in philological matters, he should be frequently conversing with those books, whether dictionaries, paraphrasts, commentators, or other critics, which may relieve any difficulties he meets with, and give him a more exact acquaintance with those studies which he pursues.

And whensoever any person is arrived to such a degree of knowledge in these things, as to furnish him well for the practice of criticism, let him take great care that pride and vanity, contempt of others, with inward wrath and insolence, do not mingle themselves with his remarks and censures. Let him remember the common frailties of human nature, and the mistakes to which the wisest man is sometimes liable, that he may practise this art with due modesty and candour.

THE

IMPROVEMENT OF THE MIND.

THE SECOND PART,

CONTAINING

VARIOUS REMARKS AND RULES

ABOUT

THE COMMUNICATION OF USEFUL KNOWLEDGE.

TO WHICH IS ADDED,

A DISCOURSE

ON

THE EDUCATION OF CHILDREN AND YOUTH.

THE

PREFACE.

THE author's name, which is prefixed to this book, renders it altogether needless for us to say any thing in order to recommend it; and we need not assure any judicious reader, who has been conversant with Dr. Watts's writings, that this is the genuine work of that excellent author; for he cannot fail of discerning the doctor's easy style and beautiful manner of expression in every page. We esteem it an honour done us by that truly great man, that he was pleased, by his last will, to entrust us with his manuscripts which he designed for the press; however, he lived to publish several of those himself, after his will was made, so that not many remain to be published by us. Some indeed there are remaining, which he did originally intend for the press, but his broken state of health did not permit him to finish them, and they are left too imperfect to be ever published. Of this sort, among others, is the larger *Discourse on Psalmody*, which he gave notice of his intention to publish, in the preface to the second edition of his Hymns, when he withdrew the shorter Essay on that subject, which was annexed to the first edition. There are also among his manuscripts, some tracts relating to a doctrinal controversy, which the Doctor had been engaged in, but which the world seems to be tired of: So that, most probably, this Second Part of *the Improvement of the Mind*, with *the Discourse on Education*, and some additions to the *Reliquiæ Juveniles*, are all the posthumous works of Dr. Watts that will ever be printed.

As to this work in particular, a considerable part of it was corrected for the press by the Doctor's own hand; and as to the rest of it, he did not leave it so far unfinished as should, in his own judgment, discourage the publishing it, for he has left this note in a paper along with it, "Though this book, or the Second Volume of *the Improvement of the Mind*, is not so far finished as I could wish, yet I leave it among the number of books corrected for the press; for it is very easy for any person of genius and science to finish it, and publish it in a form sufficiently useful to the world." The corrections we have presumed to make, are comparatively but few and trivial; and when, now and then, it was thought necessary to add a line or two for the illustration of any passage, it is generally put in the form of a note at the foot of the p age.

It may perhaps be expected we should make some apology for delaying the publishing of this book so long after the author's death; a book that has been so much expected and so earnestly desired, as appears by several letters found in the Doctor's

study, from eminent persons and from learned societies. There are various causes that have contributed to the delay, which the world need not be informed of; but the remote distance of our habitations, and the multiplicity of business in which each of us is statedly engaged, are circumstances pretty generally known, and which we hope will be admitted in excuse for some part of the delay, and some part the booksellers must answer for. However, we are the less solicitous to apologize for not publishing this book sooner, as we are satisfied it will be welcome now it comes; and that those who, upon reading the first volume, have so earnestly desired the second, will not be disappointed when they read it.

We have only to add our most sincere wishes and prayers, that a book so admirably suited to improve the minds of men, especially of the rising generation, and to promote universal goodness, as this appears to be, may be attended with a blessing from on high.

D. Jennings.
P. Doddridge.

June 26th, 1751.

THE

IMPROVEMENT OF THE MIND.

THE SECOND PART.

INTRODUCTION.

THE chief design of the former part of this book is to lead us into proper methods for the improvement of ouro wn knowledge; let us now consider what are the best means of improving the minds of others, and of communicating to them the knowledge which we have acquired. If the treasures of the mind should be hoarded up and concealed, they would profit none besides the possessor, and even his advantage by the possession would be poor and narrow, in comparison of what the same treasures would yield, both to himself and to the world, by a free communication and diffusion of them. Large quantities of knowledge acquired and reserved by one man, like heaps of gold and silver, would contract a sort of rust and disagreeable aspect, by lying in everlasting secrecy and silence; but they are burnished and glitter by perpetual circulation through the tribes of mankind.

The two chief ways of conveying knowledge to others, are, that of verbal instruction to our disciples, or by writing and publishing our thoughts to the world.

Here therefore I shall first propose some observations which relate to the conveyance of knowledge to others by regular lectures of verbal instruction, or by conversation; I shall represent several of the chief prejudices of which learners are in danger, with directions to guard against them, and then mention some of the easiest and most effectual ways of convincing persons of their mistakes, and of dealing with their understandings, when they labour under the power of prejudice. I shall afterwards add, by way of appendix, an essay, written many years ago, on the subject of education, when I designed a more complete treatise of it.

CHAPTER I.

METHODS OF TEACHING, AND READING LECTURES.

HE that has learned any thing thoroughly, in a clear and methodical manner, and has attained a distinct perception, and an ample survey of the whole subject, is generally

best prepared to teach the same subject in a clear and easy method; for, having acquired a large and distinct idea of it, and made it familiar to himself by frequent meditation, reading, and occasional discourse; he is supposed to see it on all sides, to grasp it with all its appendices and relations in one survey, and is better able to represent it to the learner in all its views, with all its properties, relations, and consequences. He knows which view or side of the subject to hold out first to his disciple, and how to propose to his understanding that part of it which is easiest to apprehend; and also knows how to set it in such a light as is most likely to allure and to assist his further enquiry.

But it is not every one who is a great scholar that always becomes the happiest teacher, even though he may have a clear conception, and a methodical as well as an extensive survey of the branches of any science. He must also be well acquainted with words, as well as ideas, in a proper variety; that when his disciple does not take in the ideas in one form of expression, he may change the phrase into several forms, till at last he hits the understanding of his scholar, and enlightens it in the just idea of truth.

Besides this, a tutor should be a person of a happy and condescending temper, who has patience to bear with a slowness of perception, or want of sagacity in some learners. He should also have much candour of soul, to pass a gentle censure on their impertinencies, and to pity them in their mistakes, and use every mild and engaging method for insinuating knowledge into those who are willing and diligent in seeking truth, as well as reclaiming those who are wandering into error. But of this I have spoken somewhat already, in a chapter of the former part, and shall have occasion to express something more of it shortly.

A very pretty and useful way to lead a person into the knowledge of any particular truth, is, by question and answer, which is the Socratical method of disputation, and therefore I refer the reader to that chapter or section which treats of it. On this account, dialogues are used as a polite and pleasant method of leading gentlemen and ladies into some of the sciences, who seek not the most accurate and methodical treasure of learning.

But the most usual, and perhaps the most excellent way of instructing students in any of the sciences, is, by reading lectures, as tutors in the academy do, to their pupils.

The first work is to choose a book well written, which contains a short scheme or abstract of that science; or, at least, it should not be a very copious and diffusive treatise. Or, if the tutor knows not any such book already written, he should draw up an abstract of that science himself, containing the most substantial and important parts of it, disposed in such a method as he best approves.

Let a chapter or section of this be read daily by the learner, on which the tutor should paraphrase in this manner, namely,

He should explain both words and ideas more largely, and especially what is dark and difficult should be opened and illustrated, partly by various forms of speech, and partly by apt similitudes and examples. Where the sense of the author is dubious, it must also be fixed and determined.

Where the arguments are strong and cogent, they should be enforced by some further paraphrase, and the truth of the inferences should be made plainly to appear. Where

the arguments are weak and insufficient, they should be either confirmed or rejected as useless; and new arguments, if need be, should be added to support that doctrine.

What is treated very concisely in the author should be amplified, and where several things are laid closely together they must be taken to pieces and opened by parts.

Where the tutor differs from the author which he reads, he should gently point out and confute his mistakes.

Where the method and order of the book is just and happy, it should be pursued and commended: Where it is defective and irregular, it should be corrected.

The most necessary, the most remarkable, and useful parts of that treatise, or of that science, should be peculiarly recommended to the learners, and pressed upon them, that they would retain it in memory; and what is more unnecessary or superfluous should be distinguished, lest the learner should spend too much time in the more needless parts of a science.

The various ends, uses, and services of that science, or of any part of it, should be also declared and exemplified, as far as the tutor hath opportunity and furniture to do it; particularly in mathematics and natural philosophy.

And if there be any thing remarkably beautiful or defective in the style of the writer, it is proper for the tutor to make a just remark upon it.

While he is reading and explaining any particular treatise to his pupils, he may compare the different editions of the same book, or different writers upon the same subject; he should inform them where that subject is treated by other authors, which they may peruse, and lead his disciples thereby to a further elucidation, confirmation, or improvement of that theme of discourse in which he is instructing them.

It is alluring and agreeable to the learner also, now and then to be entertained with some historical remarks, or any occurrences or useful stories which the tutor has met with, relating to the several parts of such a science, provided he does not put off his pupils merely with such stories, and neglect to give them a solid and rational information of the theme in hand. Teachers should endeavour, as far as possible, to join profit and pleasure together, and mingle delight with their instructions; but at the same time they must take heed that they do not merely amuse the ears, and gratify the fancy of their disciples, without enriching their minds.

In reading lectures of instruction, let the teacher be very solicitous that the learners take up his meaning, and therefore he should frequently enquire whether he expresses himself intelligibly, whether they understand his sense, and take in all his ideas, as he endeavours to convey them in his own forms of speech.

It is necessary that he who instructs others should use the most proper style for the conveyance of his ideas easily into the minds of those who hear him: And though, in teaching the sciences, a person is not confined to the same rules by which we must govern our language in conversation, for he must necessarily make use of many terms of art and hard words, yet he should never use them merely to shew his learning, nor affect sounding language without necessity; a caution which we shall soon farther inculcate.

I think it very convenient and proper, if not absolutely necessary, that when a tutor reads a following lecture to his pupils, he should run over the foregoing lecture in questions proposed to them, and by this means acquaint himself with their daily

proficiency.* It is in vain for the learner to object, surely we are not school-boys, to say our lessons again; we came to be taught, and not to be catechised and examined. But, alas! how is it possible for a teacher to proceed in his instructions, if he knows not how far the learner takes in and remembers what he has been taught?

Besides, I must generally believe, it is sloth or idleness, it is real ignorance, incapacity, or unreasonable pride, that makes a learner refuse to give his teacher an account how far he has profited by his last instructions. For want of this constant examination, young gentlemen have spent some idle and useless years, even under the daily labours and inspection of a learned teacher; and they have returned from the academy without the gain of any one science, and even with the shameful loss of their classical learning, that is, the knowledge of Greek and Latin, which they had learned in the grammar-school.

Let the teacher always accommodate himself to the genius, temper, and capacity of his disciples, and practise various methods of prudence to allure, persuade, and assist every one of them in their pursuit of knowledge.

Where the scholar has less capacity, let the teacher enlarge his illustrations; let him search and find out where the learner sticks, what is the difficulty; and thus let him help the labouring intellect.

Where the learner manifests a forward genius, and a sprightly curiosity by frequent enquiries; let the teacher oblige such an inquisitive soul by satisfying these questions, as far as may be done with decency and conveniency; and where these enquiries are unseasonable, let him not silence the young enquirer with a magisterial rebuff, but with much candour and gentleness postpone those questions, and refer them to a proper hour.

Curiosity is a useful spring of knowledge: It should be encouraged in children, and awakened by frequent and familiar methods of talking with them. It should be indulged in youth, but not without a prudent moderation. In those who have too much, it should be limited by a wise and gentle restraint or delay, lest, by wandering after every thing, they learn nothing to perfection. In those who have too little, it should be excited, lest they grow stupid, narrow-spirited, self satisfied, and never attain a treasure of ideas, or an amplitude of understanding.

Let not the teacher demand or expect things too sublime and difficult from the humble, modest, and fearful disciple: And where such a one gives a just and happy answer, even to plain and easy questions, let him have words of commendation and love ready for him. Let him encourage every spark of kindling light, till it grow up to bright evidence and confirmed knowledge.

Where he finds a lad pert, positive, and presuming, let the tutor take every just occasion to shew him his error: Let him set the absurdity in complete light before him, and convince him by a full demonstration of his mistake, till he sees and feels it, and learns to be modest and humble.

A teacher should not only observe the different spirit and humour among his scholars, but he should watch the various efforts of their reason and growth of their understanding. He should practise in his young nursery of learning, as a skilful gardener does

* *Note*, This precaution, though never to be neglected, is of special importance when a pupil is entering on any new branch of learning, where it is absolutely necessary that the fundamental definitions and principles should not only be clearly understood, but rendered very familiar to the mind: And probably most tutors have found young persons sadly bewildered, as they have gone on in their lectures, for want of a little more patience and care in this respect.

in his vegetable dominions, and apply prudent methods of cultivation to every plant. Let him, with a discreet and gentle hand, nip or prune the irregular shoots, let him guard and encourage the tender buddings of the understanding, till they be raised to a blossom, and let him kindly cherish the younger fruits.

The tutor should take every occasion to instil knowledge into his disciples, and make use of every occurrence in life to raise some profitable conversation upon it; he should frequently enquire something of his disciples, that may set their young reason to work, and teach them how to form inferences, and to draw one proposition out of another.

Reason being that faculty of the mind which he has to deal with in his pupils, let him endeavour by all proper and familiar methods to call it into exercise, and to enlarge the powers of it. He should take frequent opportunities to shew them when an idea is clear or confused, when the proposition is evident or doubtful, and when an argument is feeble or strong. And by this means their minds will be so formed, that whatsoever he proposes with evidence and strength of reason, they will readily receive.

When any uncommon appearances arise in the natural, moral, or political world, he should invite and instruct them to make their remarks on it, and give them the best reflections of his own, for the improvement of their minds.

He should by all means make it appear that he loves his pupils, and that he seeks nothing so much as their increase of knowledge, and their growth in all valuable acquirements; this will engage their affection to his person, and procure a just attention to his lectures.

And indeed there is but little hope that a teacher should obtain any success in his instructions, unless those that hear him have some good degree of esteem and respect for his person and character. And here I cannot but take notice, by the way, that it is a matter of infinite and unspeakable injury to the people of any town or parish, where the minister lies under contempt. If he has procured it by his own conduct, he is doubly criminal, because of the injury he does to the souls of them that hear him: But if this contempt and reproach be cast upon him by the wicked, malicious, and unjust censures of men, they must bear all the ill consequences of receiving no good by his labours, and will be accountable hereafter to the great and divine Judge of all.

It would be very necessary to add in this place, if tutors were not well apprized of it before, that since learners are obliged to seek a divine blessing on their studies, by fervent prayer to the God of all wisdom, their tutors should go before them in this pious practice, and make daily addresses to heaven for the success of their instructions.

CHAPTER II.

OF AN INSTRUCTIVE STYLE.

THE most necessary, and the most useful character of a style fit for instruction, is, that it be plain, perspicuous, and easy. And here I shall first point out all those errors in style, which diminish or destroy the perspicuity of it, and then mention a few directions how to obtain a perspicuous and easy style.

The errors of style which must be avoided by teachers, are these that follow:

1. The use of many foreign words, which are not sufficiently naturalized and mingled

with the language which we speak or write. It is true, that in teaching the sciences in English, we must sometimes use words borrowed from the Greek and Latin, for we have not in English, names for a variety of subjects which belong to learning; but when a man affects, upon all occasions, to bring in long sounding words from the ancient languages without necessity, and mingles French and other outlandish terms and phrases, where plain English would serve as well, he betrays a vain and foolish genius unbecoming a teacher.

2. Avoid a fantastic learned style, borrowed from the various sciences, where the subject and matter do not require the use of them. Do not affect terms of art on every occasion, nor seek to shew your learning by sounding words and dark phrases; this is properly called pedantry.

Young preachers, just come from the schools, are often tempted to fill their sermons with logical and metaphysical terms in explaining the text, and feed their hearers with sonorous words of vanity. This scholastic language, perhaps, may flatter their own ambition, and raise a wonderment at their learning among the staring multitude, without any manner of influence toward the instruction of the ignorant, or the reformation of the immoral or impious: These terms of art are but the tools of an artificer, by which his work is wrought in private; but the tools ought not to appear in the finished workmanship.

There are some persons so fond of geometry, that they bring in lines and circles, tangents and parabolas, theorems, problems, and postulates, upon all occasions. Others, who have dealt in astronomy, borrow even their nouns and their verbs, in their common discourse, from the stars and planets; instead of saying Jacob had twelve sons, they tell you, Jacob had as many sons as there are signs in the zodiac. If they describe an inconstant person, they make a planet of him, and set him forth in all his appearances, direct, retrograde, and stationary. If a candle be set behind the screen, they call it eclipsed; and tell you fine stories of the orbit and the revolutions, the radii and the limb, or circumference of a cart-wheel.

Others again dress up their sense in chymical language. Extracts and oils, salts and essences, exalt and invigorate their discourses: A great wit with them is sublimated spirit; and a blockhead is *caput mortuum*. A certain doctor in his bill swells in his own idea when he tells the town, that he has been counsellor to the counsellors of several kings and princes, and that he has arrived at the knowledge of the green, black, and golden dragon, known only to magicians and hermetic philosophers. It would be well if the quacks alone had a patent for this language.

3. There are some fine affected words that are used only at court, and some peculiar phrases that are sounding or gaudy, and belong only to the theatre; these should not come into the lectures of instruction: The language of poets has too much of metaphor in it, to lead mankind into clear and distinct ideas of things: The business of poesy is to strike the soul with a glaring light, and to urge the passions into a flame by splendid shows, by strong images, and a pathetic vehemence of style; but it is another sort of speech that is best suited to lead the calm enquirer into just conceptions of things.

4. There is a mean vulgar style, borrowed from the lower ranks of mankind, the baset characters and meanest affairs of life: This is also to be avoided; for it should be supposed, that persons of liberal education have not been bred up within the hearing of such language, and consequently they cannot understand it: Besides, that

it would create very offensive ideas, should we borrow even similes for illustration from the scullery, the dunghill, and the jakes.

5. An obscure and mysterious manner of expression and cloudy language is to be avoided. Some persons have been led by education, or by some foolish prejudices, into a dark and unintelligible way of thinking and speaking, and this continues with them all their lives, and clouds and confound their ideas. Perhaps some of these may have been blessed with a great and comprehensive genius, with sublime natural parts, and a torrent of ideas flowing in upon them: Yet for want of clearness in the manner of their conception and language, they sometimes drown their own subject of discourse, and overwhelm their argument in darkness and perplexity. Such preachers as have read much of the mystical divinity of the papists, and imitated their manner of expression, have many times buried a fine understanding under the obscurity of such a style.

6. A long and tedious style is very improper for a teacher, for this also lessens the perspicuity of it. Some learned writers are never satisfied, unless they fill up every sentence with a great number of ideas and sentiments; they swell their propositions to an enormous size by explications, exceptions, and precautions, lest they should be mistaken, and crowd them all into the same period; they involve and darken their discourse by many a parenthesis, and prolong their sentences to a tiresome extent, beyond the reach of a common comprehension: Such sort of writers or speakers may be rich in knowledge, but they are seldom fit to communicate it. He that would gain a happy talent for the instruction of others, must know how to disentangle and divide his thoughts, if too many of them are ready to crowd into one paragraph; and let him rather speak three sentences distinctly and perspicuously, which the hearer receives at at once with his ears and his soul, than crowd all the thoughts into one sentence, which the hearer has forgotten before he can understand it.

But this leads me to the next thing I proposed, which was to mention some methods, whereby such a perspicuity of style may be obtained as is proper for instruction.

1. Accustom yourself to read those authors who think and write with great clearness and evidence, such as convey their ideas into your understanding as fast as your eye or tongue can run over their sentences; this will imprint upon the mind a habit of imitation, we shall learn the style with which we are very conversant, and practise it with ease and success.

2. Get a distinct and comprehensive knowledge of the subject which you treat of; survey it on all sides, and make yourself perfect master of it: Then you will have all the sentiments that relate to it in your view and under your command, and your tongue will very easily clothe those ideas with words which your mind has first made so familiar and easy to itself.

> *Scribendi rectè sapere est et principium et fons:*
> *Verbaque provisam rem non invita sequentur.*
>
> HOR. DE ARTE POETICA.

> Good teaching from good knowledge springs,
> Words will make haste to follow things.

3. Be well skilled in the language which you speak; acquaint yourself with all the idioms and special phrases of it, which are necessary to convey the needful ideas on the

subject of which you treat, in the most various and most easy manner to the understanding of the hearer: The variation of a phrase in several forms is of admirable use to instruct, it is like turning all sides of the subject to view; and if the learner happens not to take in the ideas in one form of speech, probably another may be successful for that end.

Upon this account I have always thought it an useful manner of instruction, which is used in some Latin schools, which they call variation. Take some plain sentence in the English tongue, and turn it into many forms in Latin; as for instance, A wolf let into the sheep-fold, will devour the sheep: If you let a wolf into the fold, the sheep will be devoured: The wolf will devour the sheep, if the sheep-fold be left open: If the fold be not shut carefully, the wolf will devour the sheep: The sheep will be devoured by the wolf, if it find the way into the fold open: There is no defence of the sheep from the wolf, unless it be kept out of the fold: A slaughter will be made among the sheep, if the wolf can get into the fold. Thus, by turning the active voice of verbs into the passive, and the nominative case of nouns into the accusative, and altering the connection of short sentences by different adverbs or conjunctions, and by ablative cases with a preposition brought instead of the nominative, or by participles sometimes put instead of the verbs, the negation of the contrary, instead of the assertion of the thing first proposed, a great variety of forms of speech will be created, which shall express the same sense.

4. Acquire a variety of words, *a copia verborum*. Let your memory be rich in synonimous terms, or words expressing the same thing: This will not only attain the same happy effect with the variation of phrases in the foregoing direction, but it will add a beauty also to your style, by securing you from an appearance of tautology, or repeating the same words too often, which sometimes may disgust the ear of the learner.

5. Learn the art of shortening your sentences, by dividing a long complicated period into two or three small ones. When others connect and join two or three sentences in one by relative pronouns, as which, whereof, wherein, whereto, &c. and by parentheses frequently inserted; do you rather divide them into distinct periods; or at least, if they must be united, let it be done rather by conjunctions and copulatives, that they may appear like distinct sentences, and give less confusion to the hearer or reader.

I know no method so effectual to learn what I mean, as to take, now and then, some page of an author, who is guilty of such a long involved parenthetical style, and translate it into plainer English, by dividing the ideas or the sentences asunder, and multiplying the periods, till the language become smooth, and easy, and intelligible at first reading.

6. Talk frequently to young and ignorant persons upon subjects which are new and unknown to them; and be diligent to enquire whether they understand you or no; this will put you upon changing your phrases and forms of speech in a variety, till you can hit their capacity, and convey your ideas into their understandings.

CHAPTER III.

OF CONVINCING OTHER PERSONS OF ANY TRUTH, OR DELIVERING THEM FROM ERRORS AND MISTAKES.

WHEN we are arrived at a just and rational establishment in an opinion, whether it relate to religion or common life, we are naturally desirous of bringing all the world into our sentiments; and this proceeds from the affectation and pride of superior influence upon the judgment of our fellow-creatures, much more frequently than it does from a sense of duty or love to truth: So vicious and corrupt is human nature. Yet there is such a thing to be found as an honest and sincere delight in propagating truth, arising from a dutiful regard to the honour of our Maker, and a hearty love to mankind. Now, if we would be successful in our attempts to convince men of their errors, and to promote the truth, let us divest ourselves, as far as possible, of that pride and affectation, which I mentioned before, and seek to acquire that disinterested love to men and zeal for the truth, which will naturally lead us into the best methods to promote it.

And here the following directions may be useful:

1. If you would convince a person of his mistake, choose a proper place, a happy hour, and the fittest concurrent circumstances for this purpose. Do not unseasonably set upon him when he is engaged in the midst of other affairs, but when his soul is at liberty, and at leisure to hear and attend. Accost him not upon that subject, when his spirit is ruffled or discomposed with any occurrences of life, and especially when he has heated his passions in the defence of a contrary opinion; but rather seize a golden opportunity, when some occurrences of life may cast a favourable aspect upon the truth of which you would convince him, or which may throw some dark and unhappy colour or consequences upon that error from which you would fain deliver him. There are in life some *mollissima tempora fandi*, some very agreeable moments of addressing a person, which, if rightly managed, may render your attempts more successful, and his conviction easy and pleasant.

2. Make it appear by your whole conduct to the person you would teach, that you mean him well, that your design is not to triumph over his opinion, nor to expose his ignorance, or his incapacity of defending what he asserts. Let him see that it is not your aim to advance your own character as a disputant, nor to set yourself up for an instructor to mankind; but that you love him and seek his true interest: And not only assure him of this in words, when you are entering on an argument with him, but let the whole of your conduct to him at all times demonstrate your real friendship for him. Truth and argument come with particular force from the mouth of one whom we trust and love.

3. The softest and gentlest address to the erroneous, is the best way to convince them of their mistake. Sometimes it is necessary to represent to your opponent, that he is not far off from the truth, and that you would fain draw him a little nearer to it; commend and establish whatever he says that is just and true, as our blessed Saviour

treated the young scribe, when he answered well concerning the two great commandments; *Thou art not far*, says our Lord, *from the kingdom of heaven*, Mark xii. 34. Imitate the mildness and conduct of the blessed Jesus.

Come as near to your opponent as you can in all your propositions, and yield to him as much as you dare, in a consistence with truth and justice.

It is a very great and fatal mistake in persons who attempt to convince or reconcile others to their party, when they make the difference appear as wide as possible: This is shocking to any person who is to be convinced, he will choose rather to keep and maintain his own opinions, if he cannot come into yours without renouncing and abandoning every thing that he believed before. Human nature must be flattered a little as well as reasoned with, that so the argument may be able to come at his understanding, which otherwise will be thrust off at a distance. If you charge a man with nonsense and absurdities, with heresy and self-contradiction, you take a very wrong step toward convincing him.

Always remember that error is not to be rooted out of the mind of man by reproaches and railing, by flashes of wit and biting jests, by loud exclamations or sharp ridicule: Long declamations and triumph over our neighbour's mistake will not prove the way to convince him; these are signs either of a bad cause, or of want of arguments or capacity for the defence of a good one.

4. Set therefore a constant watch over yourself, lest you grow warm in dispute before you are aware. The passions never clear the understanding, but raise darkness, clouds, and confusion in the soul: Human nature is like water which has mud at the bottom of it; it may be clear while it is calm and undisturbed, and the ideas like pebbles appear bright at the bottom; but when once it is stirred and moved by passion, the mud rises uppermost, and spreads confusion and darkness over all the ideas; you cannot set things in so just and so clear a light before the eyes of your neighbour, while your own conceptions are clouded with heat and passion.

Besides, when your own spirits are a little disturbed, and your wrath is awakened, this naturally kindles the same fire in your correspondent, and prevents him from taking in your ideas, were they never so clear; for his passions are engaged all on a sudden for the defence of his own mistakes, and they combat as fiercely as yours do, which perhaps may be awakened on the side of truth.

To provoke a person whom you would convince, not only rouses his anger, and sets it against your doctrine; but directs its resentment against your person as well as against all your instructions and arguments. You must treat an opponent like a friend, if you would persuade him to learn any thing from you; and this is one great reason why there is so little success on either side between two disputants or controversial writers, because they are so ready to interest their passions in the subject of contest, and thereby to prevent the mutual light that might be given and received on either side: Ambition, indignation, and a professed zeal, reign on both sides: Victory is the point designed, while truth is pretended, and truth oftentimes perishes in the fray, or retires from the field of battle: The combatants end just where they began, their understandings hold fast the same opinions; perhaps with this disadvantage, that they are a little more obstinate and rooted in them without fresh reason, and they generally come off with the loss of temper and charity.

5. Neither attempt nor hope to convince a person of his mistake, by any penal

methods or severe usage; there is no light brought into the mind by all the fire, and sword, and bloody persecutions, that were ever introduced into the world. One would think that the princes, the priests, and the people, the learned and the unlearned, the great and the mean, should have all, by this time, seen the folly and madness of seeking to propagate the truth by the laws of cruelty; we compel a beast to the yoke by blows, because the ox and the ass have no understanding; but intellectual powers are not to be fettered and compelled at this rate: Men cannot believe what they will, nor change their religion and their sentiments as they please; they may be made hypocrites by the forms of severity, and constrained to profess what they do not believe; they may be forced to comply with external practices and ceremonies, contrary to their own consciences; but this can never please God, nor profit men.

6. In order to convince another, you should always make choice of those arguments that are best suited to his understanding and capacity, his genius and temper, his state, station, and circumstances. If I were to persuade a ploughman of the truth of any form of church government, it should not be attempted by the use of the Greek and Latin fathers; but from the word of God, the light of nature, and the common reason of things.

7. Arguments should always be proposed in such a manner as may lead the mind onward to perceive the truth in a clear and agreeable light, as well as to constrain the assent by the power of reasoning. Clear ideas, in many cases, are as useful toward conviction, as a well formed and unanswerable syllogism.

8. Allow the person you desire to instruct a reasonable time to enter into the force of your argument. When you have declared your own sentiments in the brightest manner of illustration, and enforced them with the most convincing arguments, you are not to suppose that your friends should immediately be convinced and receive the truth: Habitude in a particular way of thinking, as well as in most other things, obtains the force of nature, and you cannot expect to wean a man from his accustomed errors but by slow degrees, and by his own assistance; entreat him therefore not to judge on the sudden, nor determine against you at once, but that he would please to review your scheme, reflect upon your arguments with all the impartiality he is capable of, and take time to think these over again at large; at least that he would be disposed to hear you speak yet further on this subject, without pain or aversion.

Address him, therefore, in an obliging manner; and say, I am not so fond as to think I have placed the subject in such lights as to throw you on a sudden into a new track of thinking, or to make you immediately lay aside your present opinions or designs; all that I hope is, that some hint or other, which I have given, is capable of being improved by you to your own conviction, or possibly it may lead you to such a train of reasoning, as in time to effect a change in your thoughts. Which hint leads me to add,

9. Labour as much as possible to make the person you would teach his own instructor. Human nature may be allured, by a secret pleasure and pride in its own reasoning, to seem to find out by itself the very thing that you would teach; and there are some persons that have so much of this natural bias towards self rooted in them, that they can never be convinced of a mistake by the plainest and strongest arguments to the contrary, though the demonstration glare in their faces; but they may be tempted by such gentle insinuations to follow a track of thought, which you propose, till they

have wound themselves out of their own error, and led themselves hereby into your opinion, if you do but let it appear, that they are under their own guidance rather than yours. And perhaps there is nothing which shews more dexterity of address than this secret influence over the minds of others, which they do not discern even while they follow it.

10. If you can gain the main point in question, be not very solicitous about the nicety with which it shall be expressed. Mankind is so vain a thing, that it is not willing to derive from another, and though it cannot have every thing from itself, yet it would seem at least to mingle something of its own with what it derives elsewhere; therefore, when you have set your sentiment in the fullest light, and proved it in the most effectual manner, an opponent will bring in some frivolous and useless distinction on purpose to change the form of words in the question, and acknowledge that he receives your proposition in such a sense, and in such a manner of expression, though he cannot receive it in your terms and phrases. *Vanillus* will confess he is now convinced, that a man who behaves well in the state, ought not to be punished for his religion; but yet he will not consent to allow an universal toleration of all religions that do not injure the state, which is the proposition I had been proving. Well, let *Vanillus* therefore use his own language, I am glad he is convinced of the truth; he shall have leave to dress it in his own way.

To these directions I shall add two remarks, in the conclusion of this chapter, which would not so properly fall under the preceding directions.

Remark I. When you have laboured to instruct a person in some controverted truth, and yet he retains some prejudice against it, so that he doth not yield to the convincing force of your arguments, you may sometimes have happy success in convincing him of that truth, by setting him to read a weak author, who writes against it: A young reader will find such pleasure in being able to answer the arguments of the opposer, that he will drop his former prejudices against the truth, and yield to the power and evidence of your reasons. I confess this looks like setting up one prejudice to overthrow another; but where prejudices cannot be fairly removed by dint of reason, the wisest and best of teachers will sometimes find it necessary to make a way for reason and truth to take place by this contrast of prejudices.

Remark II. When our design is to convince a whole family, or community of persons, of any mistake, and to lead them into any truth, we may justly suppose there are various reigning prejudices among them; and therefore it is not so safe to attempt, nor so easy to effect it, by addressing the whole number at once. Such a method has been often found to raise a sudden alarm, and has produced a violent opposition even to the most fair, pious, and useful proposal; so that he who made the motion could never carry his point.

We must therefore first make as sure as we can of the most intelligent and learned, at least the most leading persons amongst them, by addressing them apart prudently, and offering proper reasons, till they are convinced and engaged on the side of truth; and these may with more success apply themselves to others of the same community; yet the original proposer should not neglect to make a distinct application to all the rest, so far as circumstances admit.

Where a thing is to be determined by a number of votes, he should labour to secure a good majority, and then take care that the most proper persons should move and

argue the matter in public, lest it be quashed in the very first proposal by some prejudice against the proposer.

So unhappily are our circumstances situated in this world, that if truth, and justice, and goodness could put on human forms, and descend from heaven, to propose the most divine and useful doctrines, and bring with them the clearest evidence, and publish them at once to a multitude whose prejudices are engaged against them, the proposal would be vain and fruitless, and would neither convince nor persuade; so necessary is it to join art and dexterity, together with the force of reason, to convince mankind of truth, unless we came furnished with miracles or omnipotence to create a conviction.*

CHAPTER IV.

OF AUTHORITY.—OF THE ABUSE OF IT: AND OF ITS REAL AND PROPER USE AND SERVICE.

THE influence which other persons have upon our opinions is usually called authority. The power of it is so great and widely extensive, that there is scarcely any person in the world entirely free from the impressions of it, even after their utmost watchfulness and care to avoid it. Our parents and tutors, yea our very nurses, determine a multitude of our sentiments; our friends, our neighbours, the custom of the country where we dwell, and the established opinions of mankind, form our belief; the great, the wise, the pious, the learned, and the ancient, the king, the priest, and the philosopher, are characters of mighty efficacy to persuade us to receive what they dictate. These may be ranked under different heads of prejudice, but they are all of a kindred nature, and may be reduced to this one spring or head of authority.

I have treated of these particularly in Logick, Part II. Chap. III. Sect. 4; yet a few other remarks occurring among my papers, I thought it not improper to let them find a place here.

Cicero was well acquainted with the unhappy influences of authority, and complains of it in his first book *De Natura Deorum*. "In disputes and controversies," says he, "it is not so much the author or patrons of any opinion, as the weight and force of argument, which should influence the mind. The authority of those who teach is a frequent hindrance to those who learn, because they utterly neglect to exercise their own judgment, taking for granted whatsoever others, whom they reverence, have judged for them. I can by no means approve what we learn from the Pythagoreans, that if any thing asserted in disputation was questioned, they were wont to answer, *Ipse dixit*, that is, He himself said so, meaning Pythagoras. So far did prejudice prevail, that authority without reason was sufficient to determine disputes and to establish truth."

All human authority, though it be never so ancient, though it hath had universal sovereignty, and swayed all the learned and the vulgar world for some thousands of years, yet has no certain and undoubted claim to truth: Nor is it any violation of good manners, to enter a caveat with due decency against its pretended dominion. What is there

* The conduct of Christ and his apostles (armed as they were with supernatural powers) in the gradual openings of truth against which the minds of their disciples were strongly prejudiced, may not only secure such an address from the imputation of dishonest craft, but may demonstrate the expediency, and in some cases the necessity of attending to it.

among all the sciences that has been longer established and more universally received ever since the days of Aristotle, and perhaps for ages before he lived, than this, that "all heavy bodies whatsoever tend toward the centre of the earth?" But Sir Isaac Newton has found that those bulky and weighty bodies, the earth and all the planets, tend toward the centre of the sun, whereby the authority of near three thousand years, or more, is not only called in question, but actually refuted and renounced.

Again, Was ever any thing more universally agreed among the nation of the poets and critics, than that Homer and Virgil are inimitable writers of heroic poems? And whoever presumed to attack their writings or their reputation was either condemned for his malice, or derided for his folly. These ancient authors have been supposed to derive peculiar advantages to aggrandize their verses from the heathen theology, and that variety of appearances in which they could represent their gods, and mingle them with the affairs of men: Yet within these few years Sir Richard Blackmore, whose prefaces are universally esteemed superior in their kind to any of his poems, has ventured to pronounce some noble truths, in that excellent preface to his poem called *Alfred*, and has bravely demonstrated there, beyond all possible exception, that both Virgil and Homer are often guilty of very gross blunders, indecencies, and shameful improprieties; and that they were so far from deriving any advantage from the rabble of heathen gods, that their theology almost unavoidably exposed them to many of those blunders; and that it is not possible upon the foot of gentile superstition to write a perfect epic poem: Whereas the sacred religion of the Bible would furnish a poem with much more just and glorious scenes and a nobler machinery.

Mr. Dennis also had made it appear in his Essays, some years before, that there were no images so sublime in the brightest of the heathen writers, as those with which we are furnished in the poetic parts of the holy scripture: And Rapin, the French critic, dared to profess the same sentiments, notwithstanding the world of poets and critics had so universally and unanimously exalted the heathen writers to the sovereignty for so many ages. If we would find out the truth in many cases, we must dare to deviate from the long-beaten track, and venture to think with a just and unbiassed liberty.

Though it be necessary to guard against the evil influences of authority, and the prejudices derived thence, because it has introduced thousands of errors and mischiefs into the world, yet there are three eminent and remarkable cases, wherein authority, or the sentiments of other persons, must or will determine the judgment and practice of mankind.

I. Parents are appointed to judge for their children in their younger years, and to instruct them what they should believe, and what they should practise in the civil and religious life. This is a dictate of nature, and doubtless it would have been so in a state of innocence. It is impossible that children should be capable of judging for themselves before their minds are furnished with a competent number of ideas, before they are acquainted with any principles and rules of just judgment, and before their reason is grown up to any degrees of maturity and proper exercises upon such subjects.

I will not say, that a child ought to believe nonsense and impossibility, because his father bids him; for so far as the impossibility appears, he cannot believe it: Nor will I say, he ought to assent to all the false opinions of his parents, or to practise idolatry and murder, or mischief, at their command: Yet a child knows not any better way to find out what he should believe and what he should practise, before he can possibly

judge for himself, than to run to his parents, and receive their sentiments and their directions.

You will say, This is hard indeed, that the child of a heathen idolater, or a cruel cannibal, is laid under a sort of necessity by nature of sinning against the light of nature. I grant it is hard indeed, but it is only owing to our original fall and apostacy: The law of nature continues as it was in innocence, namely, that a parent should judge for his child; but, if the parent judges ill, the child is greatly exposed by it, through that universal disorder that is brought into the world by the sin of Adam, our common father: And from the equity and goodness of God we may reasonably infer, that the great Judge of all will do right: He will balance the ignorance and incapacity of the child, with the criminal nature of the offence, in those puerile instances, and will not punish beyond just demerit.

Besides, what could God, as a Creator, do better for children in their minority, than to commit them to the care and instruction of parents? None are supposed to be so much concerned for the happiness of children as their parents are; therefore it is the safest step to happiness, according to the original law of creation, to follow their directions, their parents' reason acting for them, before they have reason of their own in proper exercise; nor indeed is there any better general rule in our fallen state, by which children are capable of being governed, though in many particular cases it may lead them far astray from virtue and happiness.

If children by providence be cast under some happier instructions, contrary to their parents' erroneous opinions, I cannot say it is the duty of such children to follow error, when they discern it to be error, because their father believes it; what I said before is to be interpreted only of those that are under the immediate care and education of their parents, and not yet arrived at years capable of examination; I know not how these can be freed from receiving the dictates of parental authority in their youngest years, except by immediate or divine inspiration.

It is hard to say, at what exact time of life the child is exempted from the sovereignty of parental dictates. Perhaps it is much juster to suppose, that this sovereignty diminishes by degrees as the child grows in understanding and capacity, and is more and more capable of exerting his own intellectual powers, than to limit this matter by months and years.

When childhood and youth are so far expired, that the reasoning faculties are grown up to any just measure of maturity, it is certain that persons ought to begin to enquire into the reasons of their own faith and practice in all the affairs of life and religion: But as reason does not arrive at this power and self-sufficiency in any single moment of time, so there is no single moment when a child should at once cast off all its former beliefs and practices; but by degrees and in slow succession he should examine them, as opportunity and advantages offer; and either confirm, or doubt of, or change them, according to the leading of conscience and reason, with all its best advantages of information.

When we are arrived at manly age, there is no person on earth, no set or society of men whatsoever, that have power and authority given them by God, the Creator and Governor of the world, absolutely to dictate to others their opinions or practices in the moral and religious life. God has given every man reason to judge for himself, in higher or in lower degrees. Where less is given, less will be required. But we are

justly chargeable with criminal sloth, and misimprovement of the talents with which our Creator has entrusted us, if we take all things for granted which others assert, and believe and practise all things which they dictate, without due examination.

II. Another case wherein authority must govern our assent, is in many matters of fact. Here we may and ought to be determined by the declarations or narratives of other men; though, I confess, this is usually called testimony rather than authority. It is upon this foot, that every son or daughter among mankind are required to believe that such and such persons are their parents, for they can never be informed of it but by the dictates of others. It is by testimony that we are to believe the laws of our country, and to pay all proper deference to the prince, and to magistrates in subordinate degrees of authority, though we did not actually see them chosen, crowned, or invested with their title and character. It is by testimony that we are necessitated to believe there is such a city as Canterbury or York, though perhaps we have never been at either; that there are such persons as papists at Paris and Rome, and that there are many sottish and cruel tenets in their religion. It is by testimony we believe that Christianity and the books of the Bible have been faithfully delivered down to us through many generations; that there was such a person as Christ our Saviour, that he wrought miracles and died on the cross, that he rose again and ascended to heaven.

The authority or testimony of men, if they are wise and honest, if they had full opportunities and capacities of knowing the truth, and are free from all suspicion of deceit in relating it, ought to sway our assent; especially when multitudes concur in the same testimony, and when there are many other attending circumstances that raise the proposition which they dictate to the degree of moral certainty.

But in this very case, even in matters of fact and affairs of history, we should not too easily give in to all the dictates of tradition, and the pompous pretences to the testimony of men, till we have fairly examined the several things which are necessary to make up a credible testimony, and to lay a just foundation for our belief. There are and have been so many falsehoods imposed upon mankind, with specious pretences of eye and ear witnesses, that should make us wisely cautious and justly suspicious of reports, where the concurrent signs of truth do not fairly appear, and especially where the matter is of considerable importance. And the less probable the fact testified is in itself, the greater evidence may we justly demand of the veracity of that testimony on which it claims to be admitted.

III. The last case wherein authority must govern us is when we are called to believe what persons under inspiration have dictated to us. This is not properly the authority of men, but of God himself; and we are obliged to believe what that authority asserts, though our reason at present may not be able any other way to discover the certainty or evidence of the proposition: It is enough if our faculty of reason, in its best exercise, can discover the divine authority which has proposed it. Where doctrines of divine revelation are plainly published, together with sufficient proofs of their revelation, all mankind are bound to receive them, though they cannot perfectly understand them; for we know that God is true, and cannot dictate falsehood.

But if these pretended dictates are directly contrary to the natural faculties of understanding and reason, which God has given us, we may be well assured these dictates were never revealed to us by God himself. When persons are really influenced by

authority to believe pretended mysteries, in plain opposition to reason, and yet pretend reason for what they believe, this is but a vain amusement.

There is no reason whatsoever that can prove or establish any authority so firmly, as to give it power to dictate in matters of belief, what is contrary to all the dictates of our reasonable nature. God himself has never given us any such revelations; and I think it may be said, with reverence, he neither can nor will do it, unless he change our faculties from what they are at present. To tell us we must believe a proposition which is plainly contrary to reason, is to tell us that we must believe two ideas are joined, while (if we attend to reason) we plainly see and know them to be disjoined.

What could ever have established the nonsense of transubstantiation in the world, if men had been fixed in this great truth, that God gives no revelation contradictory to our own reason? Things may be above our reason, that is, reason may have but obscure ideas of them, or reason may not see the connection of these ideas, or may not know at present the certain and exact manner of reconciling such propositions either with one another, or with other rational truths, as I have explained in some of my logical papers: But when they stand directly and plainly against all sense and reason, as transubstantiation does, no divine authority can be pretended to enforce their belief, and human authority is impudent to pretend to it. Yet this human authority, in the popish countries, has prevailed over millions of souls, because they have abandoned their reason, they have given up the glory of human nature to be trampled upon by knaves, and so reduced themselves to the condition of brutes.

It is by this amusement of authority (says a certain author) that the horse is taught to obey the words of command, a dog to fetch and carry, and a man to believe inconsistencies and impossibilities. Whips and dungeons, fire and the gibbet, and the solemn terrors of eternal misery after this life, will persuade weak minds to believe against their senses, and in direct contradiction to all their reasoning powers. A parrot is taught to tell lies with much more ease and more gentle usage; but none of all these creatures would serve their masters at the expense of their liberty, had they but knowledge and the just use of reason.

I have mentioned three cases, wherein mankind must or will be determined in their sentiments by authority; that is, the case of children in their minority, in regard of the commands of their parents; the case of all men with regard to universal, complete, and sufficient testimony of matter of fact; and the case of every person, with regard to the authority of divine revelation, and of men divinely inspired; and under each of these I have given such limitations and cautions as were necessary.

I proceed now to mention some other cases, wherein we ought to pay a great deference to the authority and sentiments of others, though we are not absolutely concluded and determined by their opinions.

I. When we begin to pass out of our minority, and to judge for ourselves in matters of the civil and religious life, we ought to pay very great deference to the sentiments of our parents, who in the time of our minority were our natural guides and directors in these matters. So in matters of science, an ignorant and inexperienced youth should pay great deference to the opinions of his instructors: And though he may justly suspend his judgment in matters which his tutors dictate, till he perceive sufficient evidence for them; yet neither parents nor tutors should be directly opposed without

great and most evident reasons, such as constrain the understanding or conscience of those concerned.

II. Persons of years and long experience of human affairs, when they give advice in matters of prudence or civil conduct, ought to have a considerable deference paid to their authority by those that are young and have not seen the world, for it is more probable that the elder persons are in the right.

III. In the affairs of practical godliness, there should be much deference paid to persons of long standing in virtue and piety. I confess, in the particular forms and ceremonies of religion, there may be as much bigotry and superstition among the old as the young; but in questions of inward religion and pure devotion, or virtue, a man who has been long engaged in the sincere practice of these things, is justly presumed to know more than a youth with all his ungoverned passions, appetites, and prejudices about him.

IV. Men in their several professions and arts, in which they have been educated, and in which they have employed themselves all their days, must be supposed to have greater knowledge and skill than others; and therefore there is due respect to be paid to their judgment in those matters.

V. In matters of fact, where there is not sufficient testimony to constrain our assent, yet there ought to be due deference paid to the narratives of persons wise and sober, according to the degrees of their honesty, skill, and opportunity to acquaint themselves therewith.

I confess, in many of these cases, where the proposition is a mere matter of speculation, and doth not necessarily draw practice along with it, we may delay our assent till better evidence appear; but where the matter is of a practical nature, and requires us to act one way or another, we ought to pay much deference to authority or testimony, and follow such probabilities where we have no certainty; for this is the best light we have, and surely it is better to follow such sort of guidance, where we can have no better, than to wander and fluctuate in absolute uncertainty. It is not reasonable to put out our candle, and sit still in the dark, because we have not the light of sun-beams.

CHAPTER V.

OF TREATING AND MANAGING THE PREJUDICES OF MEN.*

IF we had nothing but the reason of men to deal with, and that reason were pure and uncorrupted, it would then be a matter of no great skill or labour to convince another person of common mistakes, or to persuade him to assent to plain and obvious truths. But, alas! mankind stand wrapped round in errors, and intrenched in prejudices; and every one of their opinions is supported and guarded by something else beside reason. A young bright genius, who has furnished himself with a variety of truths and strong arguments, but is yet unacquainted with the world, goes forth from the schools, like a knight errant, presuming bravely to vanquish the follies of men, and to scatter light and

* For the nature and causes of prejudices, and for the preventing or curing them in ourselves, see the Doctor's excellent System of Logick, Part II. Chap. III. Of the springs of false judgment, or the doctrine of prejudices.

truth through all his acquaintance. But he meets with huge giants and enchanted castles, strong prepossessions of mind, habits, customs, education, authority, interest, together with all the various passions of men, armed and obstinate to defend their old opinions; and he is strangely disappointed in his generous attempts. He finds now that he must not trust merely to the sharpness of his steel and to the strength of his arm, but he must manage the weapons of his reason with much dexterity and artifice, with skill and address, or he shall never be able to subdue errors and to convince mankind.

Where prejudices are strong, there are these several methods to be practised in order to convince persons of their mistakes, and make a way for truth to enter into their minds.

I. By avoiding the power and influence of the prejudice, without any direct attack upon it: And this is done by choosing all the slow, soft, and distant methods of proposing your own sentiments, and your arguments for them, and by degrees leading the person, step by step, into those truths which his prejudices would not bear if they were proposed all at once.

Perhaps your neighbour is under the influence of superstition and bigotry, in the simplicity of his soul; you must not immediately run upon him with violence, and shew him the absurdity or folly of his own opinions, though you might be able to set them in a glaring light: But you must rather begin at a distance, and establish his assent to some familiar and easy propositions, which have a tendency to refute his mistakes, and to confirm the truth: And then silently observe what impression this makes upon him, and proceed by slow degrees as he is able to bear; and you must carry on the work, perhaps at distant seasons of conversation. The tender or diseased eye cannot bear a deluge of light at once.

Therefore we are not to consider our arguments merely according to our own notions of their force, and from thence expect the immediate conviction of others; but we should regard how they are likely to be received by the persons we converse with; and thus manage our reasoning, as the nurse gives a child drink by slow degrees, lest the infant should be choked or return it all back again if poured in too hastily. If your wine be never so good, and you are never so liberal in bestowing it on your neighbour, yet if his bottle, into which you attempt to pour it with freedom, has a narrow mouth, you will sooner overset the bottle than fill it with wine.

Over-hastiness and vehemence in arguing is oftentimes the effect of pride: It blunts the poignancy of the argument, breaks its force, and disappoints the end. If you were to convince a person of the falsehood of the doctrine of transubstantiation, and you take up the consecrated bread before him and say, You may see, and taste, and feel, this is nothing but bread; therefore whilst you assert that God commands you to believe it is not bread, you most wickedly accuse God of commanding you to tell a lie. This sort of language would only raise the indignation of the person against you, instead of making any impressions upon him. He will not so much as think at all on the argument you have brought, but he rages at you as a profane wretch, setting up your own sense and reason above sacred authority; so that though what you affirm is a truth of great evidence, yet you lose the benefit of your whole argument by an ill management, and the unseasonable use of it.

II. We may expressly allow and indulge those prejudices for a season, which seem

to stand against the truth, and endeavour to introduce the truth by degrees while those prejudices are expressly allowed, till by degrees the advancing truth may of itself wear out the prejudice. Thus God himself dealt with his own people, the Jews, after the resurrection of Christ; for though from the following days of Pentecost, when the gospel was proclaimed and confirmed at Jerusalem, the jewish ceremonies began to be void and ineffectual for any divine purpose, yet the Jews who received Christ the Messiah were permitted to circumcise their children, and to practise many Levitical forms, till that constitution which then waxed old should in time vanish away.

Where the prejudices of mankind cannot be conquered at once, but they will rise up in arms against the evidence of truth, we must make some allowances, and yield to them for the present, as far as we can safely do it without real injury to truth: And if we would have any success in our endeavours to convince the world, we must practise this complaisance for the benefit of mankind.

Take a student, who has deeply inbibed the principles of the peripatetics, and imagines certain immaterial beings, called substantial forms, to inhabit every herb, flower, mineral, metal, fire, water, &c. and to be the spring of all its properties and operations: Or take a Platonist, who believes an *anima mundi*, an universal soul of the world, to pervade all bodies, to act in and by them according to their nature, and indeed to give them their nature and their special powers: Perhaps it may be very hard to convince these persons by argument, and constrain them to yield up these fancies. Well then, let the one believe his universal soul, and the other go on with his notion of substantial forms, and at the same time teach them how, by certain original laws of motion, and the various sizes, shapes, and situations of the parts of matter, allowing a continued divine concourse in and with all, the several appearances in nature may be solved, and the variety of effects produced, according to the corpuscular philosophy, improved by Des Cartes, Mr. Boyle, and Sir Isaac Newton; and when they have attained a degree of skill in this science, they will see these airy notions of theirs, these imaginary powers, to be so useless and unnecessary, that they will drop them of their own accord: The peripatetic forms will vanish from the mind like a dream, and the Platonic soul of the world will expire.

Or suppose a young philosopher under a powerful persuasion that there is nothing but what has three dimensions, length, breadth, and thickness, and consequently that every finite being has a figure or shape; for shape is but the term and boundary of dimension: Suppose this person, through the long prejudices of sense and imagination, cannot be easily brought to conceive of a spirit, or a thinking being, without shape and dimensions; let him then continue to conceive a spirit with dimensions; but be sure in all his conceptions to retain the idea of cogitation or a power of thinking, and thus proceed to philosophise upon the subject. Perhaps in a little time he will find that length, breadth, and shape, have no share in any of the actions of a spirit; and that he can manifest all the properties and relations of such a being, with all its operations of sensation, volition, &c. to be as well performed without the use of this supposed shape or these dimensions; and that all these operations and these attributes may be ascribed to a spirit, considered merely as a power of thinking. And when he further conceives that God, the infinite Spirit, is an almighty, self-existing, thinking power, without shape and dimensions of length, breadth, and depth, he may then suppose the human spirit may be an inferior self-subsisting power of thought; and he may be inclined to drop

the ideas of dimension and figure by degrees, when he sees and is convinced they do nothing towards thinking, nor are they necessary to assist or explain the operations or properties of a spirit.

I may give another instance of the same practice, where there is a prejudicate fondness of particular words and phrases. Suppose a man is educated in an unhappy form of speech whereby he explains some great doctrine of the gospel, and by the means of this phrase he has imbibed a very false idea of that doctrine; yet he is so bigotted to his form of words, that he imagines if those words are omitted the doctrine is lost. Now, if I cannot possibly persuade him to part with his improper terms, I will indulge them a little, and try to explain them into a scriptural sense, rather than let him go on in his mistaken ideas.

Credonius believes that Christ descended into hell: I think the word hell, as now commonly understood, is very improper here; but since the bulk of Christians, and *Credonius* among them, will by no means part with the word out of their English creed, I will explain the word hell to signify the state of the dead, or the separate state of souls; and thus lead my friend into more just ideas of the truth, namely, that the soul of Christ existed three days in the state of separation from his body, or was in the invisible world, which might be originally called *hell* in English, as well as *hades* in Greek.

Anilla has been bred a papist all her days, and though she does not know much of religion, yet she resolves never to part from the Roman catholic faith, and is obstinately bent against a change. Now I cannot think it unlawful to teach her the true christian, that is, the protestant religion, out of the epistle to the Romans, and shew her that the same doctrine is contained in the catholic epistles of St. Peter, James, and Jude; and thus let her live and die a good Christian, in the belief of the religion I teach her out of the New Testament, whilst she imagines she is a Roman catholic still, because she finds the doctrine she is taught in the catholic epistles, and in that to the Romans.

I grant it is most proper there should be different words, as far as possible, applied to different ideas; and this rule should never be dispensed with, if we had to do only with the reason of mankind; but their various prejudices and zeal for some party-phrases, sometimes make it necessary that we should lead them into truth under the covert of their own beloved forms of speech, rather than permit them to live and die obstinate and unconvincible in any dangerous mistake: Whereas an attempt to deprive them of their old-established words, would raise such a tumult within them, as to render their conviction hopeless.

III. Sometimes we may make use of the very prejudices under which a person labours, in order to convince him of some particular truth, and argue with him upon his own professed principles as though they were true. This is called, *Argumentum ad hominem*, and is another way of dealing with the prejudices of men. Suppose a Jew lies sick of a fever, and is forbidden flesh by his physician; but hearing that rabbits were provided for the dinner of the family, desired earnestly to eat of them; and suppose he became impatient because his physician did not permit him, and he insisted upon it, that it could do him no hurt: Surely rather than let him persist in that fancy and that desire, to the danger of his life, I would tell him that those animals were strangled, which sort of food was forbidden by the Jewish law, though I myself may believe that law is now abolished.

In the same manner was *Tenerilla* persuaded to let *Damon*, her husband, prosecute a thief, who broke open their house on a Sunday. At first she abhorred the thoughts of it, and refused it utterly, because if the thief were condemned, according to the English law, he must be hanged; whereas, said she, the law of God, in the writings of Moses, does not appoint death to be the punishment of such criminals, but tells us, that a thief shall be sold for his theft; *Exod.* xxii. 3. But when *Damon* could no other ways convince her that the thief ought to be prosecuted, he put her in mind that the theft was committed on a Sunday morning; now the same law of Moses requires, that "the sabbath-breaker shall surely be put to death;" *Exod.* xxxi. 15. *Numb.* xv. 35. This argument prevailed with *Tenerilla*, and she consented to the prosecution.

Encrates used the same means of conviction when he saw a Mahometan drink wine to excess, and heard him maintain the lawfulness and pleasure of drunkenness: *Encrates* reminded him, that his own prophet Mahomet had utterly forbidden all wine to his followers; and the good man restrained his vicious appetite by this superstition, when he could no otherwise convince him that drunkenness was unlawful, nor withhold him from excess.

Where we find any person obstinately persisting in a mistake in opposition to all reason, especially if the mistake be very injurious or pernicious, and we know this person will hearken to the sentiment or authority of some favourite name, it is needful sometimes to use the opinion and authority of that favourite person, since that is likely to be regarded much more than reason. I confess, I am almost ashamed to speak of using any influence of authority, while I would teach the art of reasoning. But in some cases it is better that poor, silly, perverse, obstinate creatures should be persuaded to judge and act right, by a veneration for the sense of others, than to be left to wander in pernicious errors, and continue deaf to all argument and blind to all evidence. They are but children of a larger size; and since they persist all their lives in their minority, and reject all true reasoning, surely we may try to persuade them to practise what is for their own interest by such childish reasons as they will hearken to: We may overawe them from pursuing their own ruin by the terrors of a solemn shadow, or allure them by a sugar-plum to their own happiness.

But after all, we must conclude, that wheresoever it can be done, it is best to remove and root out those prejudices which obstruct the entrance of truth into the mind, rather than to palliate, humour, or indulge them; and sometimes this must necessarily be done, before you can make a person part with some beloved error, and lead him into better sentiments.

Suppose you would convince a gamester, that gaming is not a lawful calling, or business of life, to maintain oneself by it, and you make use of this argument, namely, "That which doth not admit us to ask the blessing of God that we may get gain by it, cannot be a lawful employment; but we cannot ask the blessing of God on gaming, therefore," &c. The minor is proved thus: "We cannot pray that our neighbour may lose; this is contrary to the rule of seeking our neighbour's welfare, and loving him as ourselves; this is wishing mischief to our neighbour. But in gaming, we can gain but just so much as our neighbour loses: Therefore in gaming we cannot pray for the blessing of God that we may gain by it." Perhaps the gamester shrugs and winces, turns and twists the argument every way, but he cannot fairly answer it; yet he will patch up an answer to satisfy himself, and will never yield to the conviction, because he

feels so much of the sweet influence of gaming, either towards the gratification of his avarice, or the support of his expenses. Thus he is under a strong prejudice in favour of it, and is not easily convinced.

Your first work, therefore, must be to lead him by degrees to separate the thoughts of his own interest from the argument, and shew him that our own temporal interests, our livelihood, or our loss, hath nothing to do to determine this point in opposition to the plain reason of things, and that he ought to put these considerations quite out of the question, if he would be honest and sincere in his search after truth or duty: And that he must be contented to hearken to the voice of reason and truth, even though it should run counter to his secular interest. When this is done, then an argument may carry some weight or force with it toward his conviction.

In like manner, if the question were, whether *Matrissa* ought to expose herself and her other children to poverty and misery, in order to support the extravagancies of a favourite son? Perhaps the mother can hear no argument against it; she feels no conviction in the most cogent reasonings, so close do her fond prejudices stick to her heart. The first business here is to remove this prejudice. Ask her therefore, whether it is not a parent's duty to love all her children, so as to provide for their welfare? Whether duty to God and her family ought not to regulate her love to a favourite? Whether her neighbour *Floris* did well in dressing up her daughters with expensive gaudery, and neglecting the education of her son till she saw his ruin? Perhaps by this method she might be brought to see, that peculiar fondness for one child should have no weight or force in determining the judgment in opposition to plain duty: And she may then give herself up to conviction in her own case, and to the evidence of truth, and thus correct her mistaken practice.

Suppose you would convert *Rominda* from popery, and you set all the absurdities, errors, and superstitions of that church before her, in the most glaring evidence: She holds them fast still, and cannot part with them, for she hath a most sacred reverence for the faith and the church of her ancestors, and cannot imagine that they were in the wrong. The first labour must be therefore to convince her, that our ancestors were fallible creatures; that we may part with their faith without any dishonour done to them; that all persons must choose their religion for themselves; that we must answer for ourselves in the great day of judgment, and not we for our parents, nor they for us; that Christianity itself had never been received by her ancestors in this nation, if they had persisted always in the religion of their parents, for they were all heathens. And when she has by these methods of reasoning been persuaded that she is not bound always to cleave to the religion of her parents, she may then receive an easier conviction of the errors of Rome.*

* But, perhaps, of all these different methods of curing prejudices, none can be practised with greater pleasure to a wise and good man, or with greater success, where success is most desirable, than attempting to turn the attention of well-meaning people from some point in which prejudice prevails, to some other of greater importance, and fixing their thoughts and heart on some great truth which they allow, and which leads into consequences contrary to some other notion which they espouse and retain. By this means they may be led to forget their errors, while attentive to opposite truth; and, in proportion to the degree in which their minds open, and their tempers grow more generous and virtuous, may be induced to resign it. And surely nothing can give a benevolent mind more satisfaction, than to improve his neighbour in knowledge and in goodness at the same time.

CHAPTER VI.

OF INSTRUCTION BY PREACHING.

SECTION I.

WISDOM BETTER THAN LEARNING IN THE PULPIT.

TYRO is a young preacher, just come from the schools of logick and divinity, and advanced to the pulpit; he was counted a smart youngster in the academy for analysing a proposition, and is full, even to the brim, with the terms of his art and learning. When he has read his text, after a short flourish of introduction, he tells you, in how many senses the chief word is taken, first among Greek heathen writers, and then in the New Testament: He cites all the chapters and the verses exactly, and endeavours to make you understand many a text before he comes to let you know fully what he means by his own.

He finds these things at large in the critics, which he has consulted, where this sort of work is necessary and beautiful, and therefore he imagines it will become his sermon well. Then he informs you, very learnedly, of the various false expositions which have been given by divines and commentators on this part of scripture, and, it may be, the reasons of each of them too; and he refutes them with much zeal and contempt. Having thus cleared his way, he fixes upon the exposition which his judgment best approves, and dwells, generally five or ten minutes upon the arguments to confirm it: And this he does not only in texts of darkness and difficulty, but even when scarcely a child could doubt of his meaning.

This grammatical exercise being performed, he applies himself to his logick; the text is divided and subdivided into many little pieces; he points you precisely to the subject and the predicate, brings you acquainted with the agent and the object, shews you all the properties and the accidents that attend it, and would fain make you understand the matter and the form of it, as well as he does himself. When he has thus done, two thirds of the hour are spent, and his hearers are quite tired; then he begins to draw near to his doctrine, or grand theme of discourse; and having told the audience, with great formality and exactness, what it is, and in what method he shall manage it, he names you one or two particulars under the first general head; and by this time finds it necessary to add, He intended indeed to have been larger in the illustration of his subject, and he should have given you some reasons for the doctrine, but he is sorry that he is prevented; and then he designed also, to have brought it down to the conscience of every man by a warm address; but his time being gone, he must break off. He hurries over a hint or two, which should have been wrought up into exhortation or instruction, but all in great haste, and thus concludes his work. The obstinate and the careless sinners go away unawakened, unconvinced; and the mourning soul departs uncomforted: The unbeliever is not led to faith in the gospel, nor the immoral wretch to hate or forsake his iniquities: The hypocrite and the man of sincerity are both unedified,

because the preacher had not time. In short, he has finished his work, and he has done nothing.

When I hear this man preach, it brings to my remembrance the account which I have heard concerning the czar of Muscovy, the first time that his army besieged a town in Livonia: He was then just come from his travels in Great Britain, where he and his ministers of state had learned the mathematics of an old acquaintance of mine: The czar took great care to begin the siege in form; he drew all the lines of circumvallation and contravallation according to the rules of art; but he was so tedious and so exact in these mathematical performances, that the season was spent, he was forced to break up the siege, and retire without any execution done upon the town.

Ergates is another sort of preacher, *a workman that need not be ashamed:* He had in his younger days but few of these learned vanities, and age and experience have now worn them all off: He preaches like a man *who watches for our souls, as one that must give an account;* he passes over lesser matters with speed, and pursues his great design, namely, *to save himself and them that hear him;* 1 Tim. iv. 16. And by following this advice of St. Paul, he happily complies with that great and natural rule of Horace, always to make haste towards the most valuable end:

Semper ad eventum festinat.

He never affects to choose a very obscure text, lest he should waste too much of the hour in explaining the literal sense of it: He reserves all those obscurities till they come in course at his seasons of public exposition; for it is his opinion, that preaching the gospel for the salvation of men carries in it a little different idea from a learned and critical exposition of the difficult texts of scripture.

He knows well how to use his logick in his composures; but he calls no part of the words by its logical name, if there be any vulgar name that answers it: Reading and meditation have furnished him with extensive views of his subject, and his own good sense hath taught him to give sufficient reasons for every thing he asserts; but he never uses one of them till a proof is needful. He is acquainted with the mistaken glosses of expositors, but he thinks it needless to acquaint his hearers with them, unless there be evident danger that they might run into the same mistake. He understands well what his subject is not, as well as what it is; but when he would explain it to you, he never says, first, negatively, unless some remarkable error is at hand, and which his hearers may easily fall into for want of such a caution.

Thus, in five or ten minutes at the most, he makes his way plain to the proposition or theme on which he designs to discourse: And being so wise as to know well what to say, and what to leave out, he proportions every part of his work to his time; he enlarges a little upon the subject, by way of illustration, till the truth becomes evident and intelligible to the weakest of his hearers; then he confirms the point with a few convincing arguments, where the matter requires it, and makes haste to turn the doctrine into use and improvement. Thus the ignorant are instructed, and the growing Christians are established and improved: The stupid sinner is loudly awakened, and the mourning soul receives consolation: The unbeliever is led to trust in Christ and his gospel; and the impenitent and immoral are convinced and softened, are melted and

reformed. The inward voice of the Holy Spirit joins with the voice of the minister; the good man and the hypocrite have their proper portions assigned them, and the work of the Lord prospers in his hand.

This is the usual course and manner of his ministry. This method being natural, plain, and easy, he casts many of his discourses into this form; but he is no slave to forms and methods of any kind: He makes the nature of his subject, and the necessity of his hearers, the great rule to direct him what method he shall choose in every sermon, that he may the better enlighten, convince, and persuade. *Ergates* well knows, that where the subject itself is entirely practical, he has no need of the formality of long uses and exhortations: He knows that practice is the chief design of doctrine; therefore he bestows most of his labour upon this part of his office, and intermingles much of the pathetic under every particular: Yet he wisely observes the special dangers of his flock, and the errors of the time he lives in; and now and then, though very seldom, he thinks it necessary to spend almost a whole discourse in mere doctrinal articles. Upon such an occasion, he thinks it proper to take up a little larger part of his hour in explaining and confirming the sense of his text, and brings it down to the understanding of a child.

At another time, perhaps, he particularly designs to entertain the few learned and polite among his auditors: And that with this view, that he may ingratiate his discourses with their ears, and may so far gratify their curiosity in this part of his sermon, as to give an easier entrance for the more plain, necessary, and important parts of it into their hearts. Then he aims at, and he reaches the sublime, and furnishes out an entertainment for the finest taste; but he scarcely ever finishes his sermon without compassion to the unlearned, and an address that may reach their consciences with words of salvation.

I have observed him sometimes after a learned discourse come down from the pulpit as a man ashamed and quite out of countenance: He has blushed and complained to his intimate friends lest he should be thought to have preached himself, and not Christ Jesus his Lord: He has been ready to wish he had entertained the audience in a more unlearned manner, and on a more vulgar subject, lest the servants, and the labourers, and tradesmen there, should reap no advantage to their souls, and the important hour of worship should be lost as to their improvement. Well he knows, and keeps it upon his heart, that the middle and lower ranks of mankind, and people of an unlettered character, make up the greater part of the assembly; therefore he is ever seeking how to adapt his thoughts and his language, and far the greatest part of all his ministrations, to the instruction and profit of persons of common rank and capacity: It is in the midst of these that he hopes to find his triumph, his joy and crown in the last great day, for *not many wise, not many noble are called.*

There is so much spirit and beauty in his common conversation, that it is sought and desired by the ingenious men of his age; but he carries a severe guard of piety always about him, that tempers the pleasant air of his discourse, even in his brightest and freest hours; and before he leaves the place, if possible, he will leave something of the savour of heaven there: In the parlour he carries on the design of the pulpit, but in so elegant a manner that it charms the company, and gives not the least occasion for censure.

His polite acquaintance will sometimes rally him for talking so plainly in his sermons,

and sinking his good sense to so low a level. But *Ergates* is bold to tell the gayest of them, "Our public business, my friend, is chiefly with the weak and the ignorant; that is, the bulk of mankind: *The poor receive the gospel:* The mechanics and day-labourers, the women and the children of my assembly, have souls to be saved; I will imitate my blessed Redeemer, in *preaching the gospel to the poor;* and learn of St. Paul to *become all things to all men, that I may win souls*, and lead many sinners to heaven by repentance, faith, and holiness.

SECTION II.

A BRANCHING SERMON.

I have always thought it a mistake in the preacher, to mince his text or his subject too small, by a great number of subdivisions; for it occasions great confusion to the understandings of the unlearned. Where a man divides his matter into more general, less general, special, and more particular heads, he is under a necessity sometimes of saying, firstly or secondly, two or three times together, which the learned may observe; but the greater part of the auditory, not knowing the analysis, cannot so much as take it into their minds, and much less treasure it up in their memories in a just and regular order; and when such hearers are desired to give some account of the sermon, they throw the thirdlys and secondlys into heaps, and make very confused work in a rehearsal, by intermingling the general and the special heads. In writing a large discourse this is much more tolerable,* but in preaching it is less profitable and more intricate and offensive.

It is as vain an affectation also to draw out a long rank of particulars in the same sermon under any one general, and run up the number of them to eighteenthly, or seven-and-twentiethly. Men that take delight in this sort of work, will cut out all their sense into shreds; and every thing that they can say upon any topic shall make a new particular.

This sort of folly and mistaken conduct appears weekly in *Polyramus*'s lectures, and renders all his discourses lean and insipid. Whether it proceed from a mere barrenness of thought and a native dryness of soul, that he is not able to vary his matter, and to amplify beyond the formal topics of an analysis, or whether it arise from affectation of such a way of talking, is hard to say; but it is certain, that the chief part of his auditory are not overmuch profited or pleased. When I sit under his preaching, I fancy myself brought into the valley of Ezekiel's vision; *it was full of bones, and behold, there were very many in the valley, and lo, they were very dry;* Ezek. xxxvii. 1, 2.

It is the variety of enlargement upon a few proper heads, that clothes the dry bones with flesh, and animates them with blood and spirits; it is this that colours the discourse, makes it warm and strong, and renders the divine propositions bright and persuasive: It is this brings down the doctrine or the duty to the understanding and conscience of the whole auditory, and commands the natural affections into the interest

* Especially as words may be used to number the generals: And figures of different kinds and forms, to marshal the primary or secondary ranks of particulars under them.

of the gospel: In short, it is this that, under the influence of the Holy Spirit, gives life and force, beauty and success to a sermon, and provides food for souls. A single rose-bush, or a dwarf-pear, with all their leaves, flowers, and fruit about them, have more beauty and spirit, in themselves, and yield more food and pleasure to mankind, than the innumerable branches, boughs and twigs of a long hedge of thorns. The fruit will feed the hungry, and the flower refresh the fainting; which is more than can be said of the thickest oak in Bashan, when it has lost its vital juice; it may spread its limbs indeed far and wide, but they are naked, withered, and sapless.

SECTION III.

THE HARANGUE.

Is it not possible to forsake one extreme without running into a worse? Is there no medium between a sermon made up of sixty dry particulars, and a long loose declamation without any distinction of the parts of it? Must the preacher divide his work by the breaks of a minute watch, or let it run on incessantly to the last word, like the flowing stream of the hour-glass that measures his divinity? Surely *Fluvio* preaches as though he knew no medium; and having taken a disgust heretofore at one of *Polyramus*'s lectures, he resolved his own discourses should have no distinction of particulars in them. His language flows smoothly in a long connection of periods, and glides over the ear like a rivulet of oil over polished marble, and like that too leaves no trace behind it. The attention is detained in a gentle pleasure, and (to say the best thing possible of it) the hearer is soothed into something like divine delight; but he can give the enquiring friend scarcely any account what it was that pleased him. He retains a faint idea of the sweetness, but has forgotten the sense.

Tell me, *Fluvio*, is this the most effectual way to instruct ignorant creatures in the several articles of faith, and the various duties of the christian life? Will such a long uniform flow of language imprint all the distinct parts of christian knowledge on the mind, in their best form and order? Do you find such a gentle and gliding stream of words most powerful to call up the souls of sinners from their dangerous or fatal lethargy? Will this indolent and moveless species of oratory make a thoughtless wretch attend to matters of infinite moment? Can a long purling sound awaken a sleepy conscience, and give a perishing sinner just notices of his dreadful hazard? Can it furnish his understanding and his memory with all the awful and tremendous topics of our religion, when it scarcely ever leaves any distinct impression of one of them on his soul? Can you make the arrow wound where it will not stick? Where all the discourse vanishes from the remembrance, can you suppose the soul to be profited or enriched? When you brush over the closed eye-lids with a feather, did you ever find it give light to the blind? Has any of your soft harangues, your continued threads of silken eloquence, ever raised the dead? I fear your whole aim is to talk over the appointed number of minutes upon the subject, or to practise a little upon the gentler passions, without any concern how to give the understanding its due improvement, or to furnish the memory with any lasting treasure, or to make a knowing and a religious Christian.

Ask old *Wheatfield* the rich farmer, ask *Plowdown* your neighbour, or any of his

family, who have sat all their lives under your ministry, what they know of the common truths of religion, or of the special articles of christianity? Desire them to tell you, what the gospel is, or what is salvation? What are their duties toward God, or what they mean by religion? Who is Jesus Christ, or what is the meaning of his atonement or redemption by his blood? Perhaps you will tell me yourself, that you have very seldom entertained them with these subjects. Well, then, enquire of them what is heaven? Which is the way to obtain it, or what hope they have of dwelling there? Entreat them to tell you, wherein they have profited as to holiness of heart or life, or fitness for death. They will soon make it appear, by their awkward answers, that they understood very little of all your fine discourses, and those of your predecessor; and have made but wretched improvement of forty years attendance at church. They have now and then been pleased, perhaps, with the music of your voice, as with the sound of a sweet instrument, and they mistook that for devotion; but their heads are dark still, and their hearts earthly; they are mere heathens with a christian name, and know little more of God than their yokes of oxen. In short, *Polyramus*'s auditors have some confusion in their knowledge, but *Fluvio*'s hearers have scarcely any knowledge at all.

But you will tell me, your discourses are not all made up of harangue; your design is sometimes to inform the mind by a train of well connected reasonings, and that all your paragraphs, in their long order, prove and support each other; and though you do not distinguish your discourse into particulars, yet you have kept some invisible method, all the way, and by some artificial gradations, you have brought your sermon down to the concluding sentence.

It may be so sometimes, and I will acknowledge it: But believe me, *Fluvio*, this artificial and invisible method carries darkness with it instead of light; nor is it by any means a proper way to instruct the vulgar, that is, the bulk of your auditory: Their souls are not capable of so wide a stretch as to take in the whole chain of your long connected consequences: You talk reason and religion to them in vain, if you do not make the argument so short as to come within their grasp, and give a frequent rest for their thoughts: You must break the bread of life into pieces to feed children with it, and part your discourses into distinct propositions, to give the ignorant a plain scheme of any one doctrine, and enable them to comprehend or retain it.

Every day gives us experiments to confirm what I say, and to encourage ministers to divide their sermons into several distinct heads of discourse. *Myrtilla*, a little creature of nine years old, was at church twice yesterday: In the morning the preacher entertained his audience with a running oration, and the child could give her parents no other account of it, but that he talked smoothly and sweetly about virtue and heaven. It was *Ergates*'s lot to fulfil the service of the afternoon; he is an excellent preacher, both for the wise and unwise: In the evening, *Myrtilla* very prettily entertained her mother with a repetition of the most considerable parts of the sermon; for "Here," said she "I can fix my thoughts upon first, secondly, and thirdly, upon the doctrine, the reasons, and the inferences; and I know what I must try to remember, and repeat it when my friends shall ask me: But as for the morning sermon, I could do nothing but hear it, for I could not tell what I should get by heart."

This manner of talking in a loose harangue has not only injured our pulpits, but it makes several essays and treatises, that are written now-a-days, less capable of

improving the knowledge or enriching the memory of the reader. I will easily grant, that where the whole discourse reaches not beyond a few pages, there is no necessity of the formal proposal of the several parts, before you handle each of them distinctly, nor is there need of such a set method: The unlearned and narrow understanding can take an easy view of the whole, without the author's pointing to the several parts. But where the essay is prolonged to a greater extent, confusion grows upon the reader almost at every page, without some scheme or method of successive heads in the discourse, to direct the mind and aid the memory.

If it be answered here, That neither such treatises nor sermons are a mere heap, for there is a just method observed in the composure, and the subjects are ranked in a proper order; it is easy to reply, That this method is so concealed, that a common reader or hearer can never find it; and you must suppose every one that peruses such a book, and much more that attends such a discourse, to have some good knowledge of the art of logick before he can distinguish the various parts and branches, the connections and transitions of it. To an unlearned eye or ear, it appears a mere heap of good things, without any method, form, or order; and if you tell your young friends they should get it into their heads and hearts, they know not how to set about it.

If we enquire, how it comes to pass that our modern ingenious writers should affect this manner? I know no juster reason to give for it, than a humorous and wanton contempt of the customs and preaching of our forefathers. A sensible disgust taken at some of their mistakes and ill conduct, at first tempted a vain generation into the contrary extreme near sixty years ago; and now, even to this day, it continues too much in fashion, so that the wise as well as the weak are ashamed to oppose it, and are borne down with the current.

Our fathers formed their sermons much upon the model of doctrine, reason, and use; and perhaps there is no one method of more universal service, and more easily applicable to most subjects, though it is not necessary or proper in every discourse: But the very names of doctrine and use are become now-a-days such stale and old-fashioned things, that a modish preacher is quite ashamed of them, nor can a modish hearer bear the sound of those syllables: A direct and distinct address to the consciences of saints and sinners must not be named or mentioned, though these terms are scriptural; lest it should be hissed out of the church, like the garb of a round-head or a puritan.

Some of our fathers have multiplied their particulars under one single head of discourse, and run up the tale of them to sixteen or seventeen. Culpable indeed, and too numerous! But in opposition to this extreme, we are almost ashamed in our age to say, thirdly; and all fourthlys and fifthlys are very unfashionable words.

Our fathers made too great account of the sciences of logick and metaphysics, and the formalities of definition and division, syllogism and method, when they brought them so often into the pulpit; but we hold those arts so much in contempt and defiance, that we had rather talk a whole hour without order and without edification, than be suspected of using logick or method in our discourses.

Some of our fathers neglected politeness, perhaps too much, and indulged a coarseness of style, and a rough or awkward pronunciation; but we have such a value for elegance, and so nice a taste for what we call polite, that we dare not spoil the cadence of a period to quote a text of scripture in it, nor disturb the harmony of our sentences, to number or to name the heads of our discourse. And for this reason, I have heard

it hinted, that the name of Christ has been banished out of polite sermons, because it is a monosyllable of so many consonants, and so harsh a sound.

But after all, our fathers, with all their defects, and with all their weaknesses, preached the gospel of Christ to the sensible instruction of whole parishes, to the conversion of sinners from the errors of their way, and the salvation of multitudes of souls. But it has been the late complaint of Dr. Edwards, and other worthy sons of the established church, that in too many pulpits now-a-days, there are only heard some smooth declamations, while the hearers that were ignorant of the gospel, abide still without knowledge and the profane sinners are profane still. O that divine grace would descend and reform what is amiss in all the sanctuaries of the nation.*

CHAPTER VII.

OF WRITING BOOKS FOR THE PUBLIC.

In the explication and distinction of words and things by definition and description; in the division of things into their several parts, and in the distribution of things into their several kinds, be sure to observe a just medium. We must not always explain and distinguish, define, divide, and distribute, nor must we always omit it: Sometimes it is useless and impertinent, sometimes it is proper and necessary. There is confusion brought into our argument and discourse by too many, or by too few of these. One author plunges his reader into the midst of things without due explication of them; another jumbles together, without distinction, all those ideas which have any likeness; a third is fond of explaining every word, and coining distinctions between ideas which have little or no difference; but each of these runs into extremes; for all these practices are equal hindrances to clear, just, and useful knowledge. It is not a long train of rules, but observation and good judgment, can teach us when to explain, define, and divide, and when to omit it.

In the beginning of a treatise, it is proper and necessary sometimes to premise some *præcognita* or general principles, which may serve for an introduction to the subject in hand, and give light or strength to the following discourse: But it is ridiculous, under a pretence of such introductions or prefaces, to wander to the most remote or distant themes, which have no near or necessary connection with the thing in hand; this serves for no other purpose but to make a gaudy show of learning. There was a professor of divinity who began an analytical exposition of the Epistle to the Romans with such *præcognita* as these: First he shewed the excellence of man above other creatures, who was able to declare the sense of his mind by arbitrary signs; then he harangued upon the origin of speech; after that he told of the wonderful invention of writing, and enquired into the author of that art which taught us to paint sounds: When he had given us the various opinions of the learned on this point, and distributed writing into its several kinds, and laid down definitions of them all, at last he came

* It appears by the date at the bottom of this paper in the manuscript, that it was written in the year 1718. The first, and perhaps the second section of it, may seem now to be grown in a great measure out of date; but whether the third is not at least as seasonable now as ever, may deserve serious consideration. The author has, since this was drawn up, delivered his sentiments more fully in the first part of that excellent piece, entitled, *An humble Attempt for the Revival of Religion, &c.*

to speak of epistolary writing, and distinguished epistles into familiar, private, public, recommendatory, credentials, and what not? Thence he descended to speak of the superscription, subscription, &c. And some lectures were finished before he came to the first verse of St. Paul's epistle; the auditors, being half starved and tired with expectation, dropped away one by one, so that the Professor had scarce any hearers to attend the college or the lectures which he had promised on that part of scripture.

The rules which Horace has given, in his *Art of Poetry*, would instruct many a preacher and professor of theology, if they would but attend to them. He informs us that a wise author, such as Homer, who writes a poem of the Trojan war, would not begin a long and far distant story of Jupiter in the form of a swan impregnating Leda with a double egg; from one part whereof Helen was hatched, who was married to Menelaus a Greek general, and then stolen from him by Paris, son of Priam, king of Troy, which awakened the resentment of the Greeks against the Trojans.

Nec gemino bellum Trojanum orditur ab ovo.

But the writer, says he, makes all proper haste to the event of things, and does not drag on slowly, perpetually turning aside from his point, and catching at every incident to prolong his story, as though he wanted matter to furnish out his tale.

Semper ad eventum festinat.

Though, I must confess, I cannot think Homer has always followed this rule in either of his two famous epic poems: But Horace does not hear what I say. There is also another rule, near akin to the former.

As a writer or a speaker should not wander from his subject to fetch in foreign matter from afar, so neither should he amass together and drag in all that can be said, even on his appointed theme of discourse; but he should consider what is his chief design, what is the end he hath in view, and then to make every part of his discourse subserve that design. If he keep his great end always in his eye, he will pass hastily over those parts or appendages of his subject which have no evident connection with his design, or he will entirely omit them, and hasten continually towards his intended mark; employing his time, his study, and labour, chiefly on that part of his subject which is most necessary to attain his present and proper end.

This might be illustrated by a multitude of examples; but an author who should heap them together on such an occasion, might be in danger of becoming himself an example of the impertinence he is cautioning others to avoid.

After you have finished any discourse which you design for the public, it would be always best, if other circumstances would permit, to let it sleep some time before you expose it to the world, that so you may have opportunity to review it with the indifference of a stranger, and to make the whole of it pass under a new and just examination: For no man can judge so justly of his own work, while the pleasure of his invention and performance is fresh, and has engaged his self-love too much on the side of what he has newly finished.

If an author would send a discourse into the world, which should be most universally approved, he should consult persons of very different genius, sentiment, and party, and endeavour to learn their opinions of it. In the world it will certainly meet with all

these. Set it therefore to view amongst several of your acquaintance first, who may survey the argument on all sides, and one may happen to suggest a correction which is entirely neglected by others; and be sure to yield yourself to the dictates of true criticism and just censure, wheresoever you meet with them; nor let a fondness for what you have written blind your eyes against the discovery of your own mistakes.

When an author desires a friend to revise his work, it is too frequent a practice to disallow almost every correction which a judicious friend shall make; he apologizes for this word and the other expression; he vindicates this sentence, and gives his reasons for another paragraph, and scarcely ever submits to correction; and this utterly discourages the freedom that a true friend would take in pointing out our mistakes. Such writers, who are so full of themselves, may go on to admire their own incorrect performances, and expose their works and their follies to the world without pity*.

Horace, in his *Art of Poetry*, talks admirably well on this subject.

Quintilio si quid recitares, corrige, sodes,
Hoc, aiebat, et hoc; melius te posse negares
Bis terque expertum frustra; delere jubebat,
Et malè tornatos incudi reddere versus.
Si defendere delictum, quàm vertere, malles;
Nullam ultrà verbum, aut operam insumebat inanem,
Quin sine rivali teque et tua solus amares.

Let good Quintilius all your lines revise,
And he will freely say, Mend this and this;
" Sir, I have often try'd, and try'd again,
I'm sure I can't do better, 'tis in vain:"
Then blot out ev'ry word, or try once more,
And file these ill-turn'd verses o'er and o'er:
But if you seem in love with your own thought,
More eager to defend, than mend your fault,
He says no more, but lets the fop go on,
And, rival-free, admire his lovely own.

CREECH.

If you have not the advantage of friends to survey your writings, then read them over yourself, and all the way consider what will be the sentence and judgment of all the various characters of mankind upon them: Think what one of your own party would say, or what would be the sense of an adversary; imagine what a curious or a malicious man, what a captious or an envious critic, what a vulgar or a learned reader would object, either to the matter, the manner, or the style: And be sure and think with yourself, what you yourself could say against your own writing, if you were of a different opinion, or a stranger to the writer: And by these means you will obtain some hints, whereby to correct and improve your own work, and to guard it better against the censures of the public, as well as to render it more useful to that part of mankind for whom you chiefly design it.

* To cut off such chicanery, it may perhaps be the most expedient for a person consulted, on such an occasion, to note down on a distinct paper, with proper references, the advised alterations, referring it to the author to make such use of them as he, on due deliberation, shall think fit.

CHAPTER VIII.

OF WRITING AND READING CONTROVERSIES.

SECTION I.

OF WRITING CONTROVERSIES.

WHEN a person of good sense writes on any controverted subject, he will generally bring the strongest arguments that are usually to be found for the support of his opinion; and when that is done, he will represent the most powerful objections against it in a fair and candid manner, giving them their full force; and at last will put in such an answer to those objections as he thinks will dissipate and dissolve the force of them; and herein the reader will generally find a full view of the controversy, together with the main strength of argument on both sides.

When a good writer has set forth his own opinion at large, and vindicated it with its fairest and strongest proofs, he shall be attacked by some pen on the other side of the question; and if his opponent be a wise and sensible writer, he will shew the best reasons why the former opinions cannot be true; that is, he will draw out the objections against them in their fullest array, in order to destroy what he supposes a mistaken opinion; and here we may reasonably suppose, that an opponent will draw up his objections against the supposed error in a brighter light, and with stronger evidence than the first writer did, who propounded his opinion which was contrary to those objections.

If, in the third place, the first writer answers his opponent with care and diligence, and maintains his own point against the objections which were raised in the best manner; the reader may then generally presume, that in these three pieces he has a complete view of the controversy; together with the most solid and powerful arguments on both sides of the debate.

But when a fourth, and fifth, and sixth volume appears in rejoinders and replies, we cannot reasonably expect any great degrees of light to be derived from them; or that much farther evidences for truth should be found in them: And it is sufficiently evident from daily experience, that many mischiefs attend this prolongation of controversies among men of learning, which for the most part do injury to the truth, either by turning the attention of the reader quite away from the original point to other matters, or by covering the truth with a multitude of occasional incidents and perplexities, which serve to bewilder rather than guide a faithful enquirer.

Sometimes, in these latter volumes, the writers on both sides will hang upon little words and occasional expressions of their opponent, in order to expose them, which have no necessary connection with the grand point in view, and which have nothing to do with the debated truth.

Sometimes they will spend many a page in vindicating their own character, or their own little sentences or accidental expressions, from the remarks of their opponent, in which expressions or remarks the original truth has no concern.

And sometimes again you shall find even writers of good sense, who have happened to express themselves in an improper and indefensible manner, led away by the fondness of self-love to justify those expressions, and vindicate those little lapses they were guilty of, rather than they will condescend to correct those little mistakes, or recal those improper expressions. O that we could put off our pride, our self-sufficiency, and our infallibility, when we enter into a debate of truth. But if the writer is guilty of mingling these things with his grand argument, happy will that reader be who has judgment enough to distinguish them, and to neglect every thing that does not belong to the original theme proposed and disputed.

Yet here it may be proper to put in one exception to this general observation or remark, namely, when the second writer attacks only a particular or collateral opinion which was maintained by the first, then the fourth writing may be supposed to contain a necessary part of the complete force of the argument, as well as the second and third, because the first writing only occasionally or collaterally mentioned that sentiment which the second attacks and opposes; and in such a case, the second may be esteemed as the first treatise on that controversy. It would take up too much time should we mention instances of this kind, which might be pointed to in most of our controversial writers, and it might be invidious to enter into the detail.*

SECTION II.

OF READING CONTROVERSIES.

WHEN we take a book into our hands wherein any doctrine or opinion is printed in a way of argument, we are too often satisfied and determined before-hand whether it be right or wrong; and if we are on the writer's side, we are generally tempted to take his arguments for solid and substantial: And thus our own former sentiment is established more powerfully, without a sincere search after truth.

If we are on the other side of the question, we then take it for granted that there is nothing of force in these arguments, and we are satisfied with a short survey of the book, and are soon persuaded to pronounce mistake, weakness, and insufficiency concerning it. Multitudes of common readers, who are fallen into any error, when they are directed and advised to read a treatise that would set them right, read it with a sort of disgust which they have before entertained; they skim lightly over the arguments, they neglect or despise the force of them, and keep their own conclusion firm in their assent, and thus maintain their error in the midst of light, and grow incapable of conviction.

* Upon this it may be remarked farther, that there is a certain spirit of modesty and benevolence which never fails to adorn a writer on such occasions, and which generally does him much more service in the judgment of wise and sensible men, than any poignancy of satire with which he might be able to animate his productions; and as this always appears amiable, so it is peculiarly charming when the opponent shews that pertness and petulancy which are so very common on such occasions. When a writer, instead of pursuing, with eager resentment, the antagonist that has given him such provocation, calmly attends to the main question in debate, with a noble negligence of those little advantages which ill-nature and ill-manners always give, he acquires a glory far superior to any trophies which wit can raise. And it is highly probable, that the solid instruction his pages may contain will give a continuance to his writings far beyond what tracts of peevish controversy are to expect, of which the much greater part are borne away into oblivion by the wind they raise, or burned in their own flames.

But if we would indeed act like sincere searchers for the truth, we should survey every argument with a careful and unbiassed mind, whether it agree with our former opinion or no: We should give every reasoning its full force, and weigh it in our sedatest judgment. Now the best way to try what force there is in the arguments which are brought against our own opinions is, to sit down and endeavour to give a solid answer, one by one, to every argument that the author brings to support his own doctrine: And in this attempt, if we find there some arguments which we are not able to answer fairly to our own minds, we should then begin to bethink ourselves, whether we have not been hitherto in a mistake, and whether the defender of the contrary sentiments may not be in the right. Such a method as this, will effectually forbid us to pronounce at once against those doctrines, and those writers, which are contrary to our sentiments; and we shall endeavour to find solid arguments to refute their positions, before we entirely establish ourselves in a contrary opinion.

Volatilis had given himself up to the conversation of the free-thinkers of our age, upon all subjects; and being pleased with the wit and appearance of argument, in some of our modern deists, had too easily deserted the christian faith, and gone over to the camp of the infidels. Among other books which were recommended to him to reduce him to the faith of the gospel, he had Mr. John Reynolds's *Three Letters to a Deist* put into his hand, and was particularly desired to peruse the third of them with the utmost care, as being an unanswerable defence of the truth of christianity. He took it in hand, and after having given it a short survey, he told his friend he saw nothing in it but the common arguments which we all use to support the religion in which we had been educated, but they wrought no conviction in him; nor did he see sufficient reason to believe that the gospel of Christ was not a piece of enthusiasm, or a mere imposture.

Upon this the friend who recommended Mr. Reynolds's *Three Letters* to his study, being confident of the force of truth which lay there, entreated *Volatilis* that he would set himself down with diligence, and try to answer Mr. Reynolds's *Third Letter*, in vindication of the gospel; and that he would shew, under every head, how the several steps which were taken in the propagation of the christian religion, might be the natural effects of imposture or enthusiasm; and, consequently, that it deserves no credit among men.

Volatilis undertook the work, and after he had entered a little way into it, found himself so bewildered, and his arguments to prove the apostles either enthusiasts or impostors so muddled, so perplexed, and so inconclusive, that by a diligent review of this Letter to the Deist, at last he acknowledged himself fully convinced that the religion of Jesus was divine; for that christian author had made it appear, it was impossible, that that doctrine should have been propagated in the world by simplicity or folly, by fraud or falsehood; and accordingly he resigned his soul up to the gospel of the blessed Jesus.

I fear there have been multitudes of such unbelievers as *Volatilis;* and he himself has confessed to me, that even his most rational friends would be constrained to yield to the evidence of the christian doctrine, if they would honestly try the same method.

A DISCOURSE

ON THE

EDUCATION OF CHILDREN AND YOUTH.

INTRODUCTION.

OF THE IMPORTANCE OF EDUCATION, AND THE DESIGN OF THIS DISCOURSE, WITH A PLAN OF IT.

THE children of the present age are the hope of the age to come. We, who are now acting our several parts in the busy scenes of life, are hasting off the stage apace; months and days are sweeping us away from the business and surface of this earth, and continually laying some of us to sleep under ground. The circle of thirty years will plant another generation in our room: Another set of mortals will be the chief actors in all the greater and lesser affairs of this life, and will fill the world with blessings or with mischiefs, when our heads lie low in the dust.

Shall we not then consider with ourselves, what can we do now to prevent those mischiefs, and to entail blessings on our successors? What shall we do to secure wisdom, goodness, and religion among the next generation of men? Have we any concern for the glory of God in the rising age? any solicitude for the propagation of virtue and happiness to those who shall stand up in our stead? Let us then hearken to the voice of God and Solomon, and we shall learn how this may be done: The all-wise God, and the wisest of men, join to give us this advice; *Train up a child in the way that he should go, and when he is old he will not depart from it.* The sense of it may be expressed more at large in this proposition, namely, *Let children have a good education given them in the younger parts of life, and this is the most likely way to establish them in virtue and piety in their elder years.*

In this discourse, I shall not enter into any enquiries about the management of children in the two or three first years of their life: I leave that tender age entirely to the care of the mother and the nurse; yet not without a wish that some wiser and happier pen would give advice or friendly notice to nurses and mothers, of what they ought to avoid, and what they ought to do in those early seasons: And, indeed, they may do much towards the future welfare of those young buds and blossoms, those lesser pieces of human nature, which are their proper charge. Some of the seeds of virtue and goodness, may be conveyed almost into their very constitution betimes, by the pious prudence of those who have the conduct of them: And some forward vices may be nipped in the very bud, which in three years time might gain too firm a root in their heart and practice, and may not easily be plucked up by all the following care of their teachers.

But I begin with children when they can walk and talk, when they have learned their mother tongue, when they begin to give some more evident discoveries of their intellectual powers, and are more manifestly capable of having their minds formed and moulded into knowledge, virtue, and piety.

Now the first and most universal ingredient which enters into the education of children, is, an instruction of them in those things which are necessary and useful for them in their rank and station, and that with regard to this world and the world to come.

I limit these instructions, especially such as relate to this world, by the station and rank of life in which children are born and placed by the providence of God. Persons of better circumstances in the world should give their sons and their daughters a much larger share of knowledge and a richer variety of instruction than meaner persons can or ought. But since every child that is born into this world hath a body and a soul, since its happiness or misery, in this world and the next, depends very much upon its instructions and knowledge, it hath a right to be taught by its parents, according to their best ability, so much as is necessary for its well-being both in soul and body, here and hereafter.

It is true, that the great God our Creator hath made us reasonable creatures: We are by nature capable of learning a million of objects: But as the soul comes into the world, it is unfurnished with knowledge; we are born ignorant of every good and useful thing; we know not God, we know not ourselves, we know not what is our duty and our interest, nor where lies our danger; and, if left entirely to ourselves, should probably grow up like the brutes of the earth; we should trifle away the brighter seasons of life in a thousand crimes and follies, and endure the fatigues and burdens of it surrounded with a thousand miseries, and at last we should perish and die without knowledge or hope, if we had no instructors.

All our other powers of nature, such as the will and the various affections, the senses, the appetites, and the limbs, would become wild instruments of madness and mischief, if they are not governed by the understanding: And the understanding itself would run into a thousand errors, dreadful and pernicious, and would employ all the other powers in mischief and madness, if it hath not the happiness to be instructed in the things of God and men. And who is there among all our fellow-creatures so much obliged to bestow this instruction on us, as the persons who, by divine providence, have been the instruments to bring us into life and being? It is their duty to give their young offspring this benefit of instruction, as far as they are able; or at least to provide such instructors for them, and to put their children under their care.

Here let us therefore enquire, what are the several things in which children should be instructed? And upon a due survey, we shall find the most important things which children ought to learn and know, are these which follow.

SECTION I.

OF INSTRUCTING CHILDREN IN RELIGION.

Religion, in all the parts of it, both what they are to believe and what they are to practise, is most necessary to be taught. I mention this in the first place, not only because it is a matter of the highest importance, and of most universal concern to all

mankind, but because it may be taught even in these very early years of life. As soon as children begin to know almost any thing, and to exercise their reason about matters that lie within the reach of their knowledge; they may be brought to know so much of religion as is necessary for their age and state. For instance,

1. Young children may be taught that there is a God, a great and almighty God, who made them, and who gives them every good thing. That he sees them every where, though they cannot see him; and that he takes notice of all their behaviour.

2. They must be told what they should do, and what they should avoid, in order to please God. They should be taught in general to know the difference between good and evil. They may learn that it is their duty to fear, and love, and worship God, to pray to him for what they want, and to praise him for what they enjoy; to obey their parents, to speak truth, and to be honest and friendly to all mankind; and to set a guard upon their own appetites and passions. And that to neglect these things, or to do any thing contrary to them, is sinful in the sight of God.

3. Their consciences are capable of receiving conviction when they have neglected these duties, or broken the commands of God, or of their parents; and they may be made sensible that the great and holy God, who loves the righteous and bestows blessings upon them, is angry with those who have broken his commands and sinned against him; and therefore that they themselves are become subject to his displeasure.

4. They may be told, that there is another world after this; and that their souls do not die when their bodies die: That they shall be taken up into heaven, which is a state of pleasure and happiness, if they have been good and holy in this world: But if they have been wicked children they must go down to hell, which is a state of misery and torment.

5. You may also inform them, that though their bodies die and are buried, yet God can and will raise them to life again: And that their body and soul together must be made happy or miserable, according to their behaviour in this life.

6. They may be taught that there is no way for such sinful creatures as we are to be received into God's favour, but for the sake of Jesus Christ the Son of God, who came down from heaven into our world, and lived a life of pure and perfect holiness, and suffered death to reconcile sinners to the great and holy God, who is offended by the sins of men; and now he lives in heaven to plead for mercy for them: And that as this Jesus Christ is the only reconciler between God and man, so all their hope must be placed in him.

7. They may be taught, that their very natures are sinful: They may be convinced, that they are naturally inclined to do evil: And they should be informed, that it is the Holy Spirit of God, who must cure the evil temper of their own spirits, and make them holy and fit to dwell with God in heaven.

8. They should also be instructed to pray to God, that for the sake of Jesus Christ, the great mediator or reconciler, he would pardon their sins past, and help them by his Spirit to love and serve him with zeal and faithfulness for time to come: That he would bestow all necessary blessings upon them in this world, and bring them safe at last to his heavenly kingdom.

9. In the last place they should be informed, that our blessed Saviour has appointed two ordinances to be observed by all his followers to the end of the world, which are usually called sacraments.

The one is baptism, wherein persons are to be washed with water in the name of the Father, the Son, and the Holy Spirit, to signify their being given up to Christ as his disciples, or professors of christianity; and as an emblem of that purity of heart and life, which, as such, they must aim at and endeavour after.

The other is the Lord's-supper, wherein bread is broken and wine is poured out and distributed to be eaten and drunk by Christians in remembrance of the body of Christ, which was put to a bloody death, as a sacrifice to obtain pardon for the sins of men.

The first of these, namely, baptism, is but once to be administered to any person; but the last, namely, the Lord's-supper, is to be frequently performed, to keep us always in mind of the death of Christ, till he comes again from heaven to judge the world.

This is the sum and substance of the christian religion, drawn out into a very few plain articles: and I think a child of common capacity, who is arrived at three or four years of age, may be taught some part of these articles, and may learn to understand them all at seven, or eight, or nine; at least so far as is needful, for all his own exercises of devotion and piety. As his age increases, he may be instructed more at large in the principles and practices of our holy religion, as I shall shew more particularly in the third section.

SECTION II.

THE EXERCISE AND IMPROVEMENT OF THEIR NATURAL POWERS.

Having mentioned religion as the principal thing in which children should be instructed, I proceed to say, in the second place, that children should be taught the true use, the exercise and improvement of their natural powers: And we may, for order sake, distinguish these into the powers of the body and those of the mind: Now though nature gives these powers and faculties, yet it is a good education that must instruct us in the exercise and improvement of them: Otherwise, like an uncultivated field, they will be ever barren and fruitless, or produce weeds and briers instead of herbs and corn.

Among the powers of the mind which are to be thus cultivated, we may reckon the understanding, the memory, the judgment, the faculty of reasoning, and the conscience.

1. Teach them to use their understanding aright. Persuade them to value their understanding as a noble faculty, and allure them to seek after the enrichment of it with a variety of knowledge. Let no day escape without adding some new ideas to their understanding, and giving their young unfurnished minds some further notion of things.

Almost every thing is new to a child, and novelty will entice them onward to new acquisitions: Shew them the birds, the beasts, the fishes, and insects, trees, herbs, fruits, and all the several parts and properties of the vegetable and the animal world: Teach them to observe the various occurrences in nature and providence, the sun, moon, and stars, the day and night, summer and winter, the clouds and the sky, the hail, snow, and ice, winds, fire, water, earth, air, fields, woods, mountains, rivers, &c. Teach them that the great God made all these things, and his providence governs them all. Acquaint a child also with domestic affairs, so far as is needful, and with the things that belong to the civil and the military life, the church and the state, with the

works of God and the works of men. A thousand objects that strike their eyes, their ears, and all their senses, will furnish out new matter for their curiosity and your instructions.

There are some books which are published in the world, wherein a child may be delightfully led into the knowledge of a great number of these things by pictures, or figures of birds, beasts, &c. well graven, with their names under them; this will much assist the labour of the teacher, and add to the pleasure of children in their daily learning.

You, who instruct them, should allure their young curiosity to ask many questions, encourage them in it, and gratify their enquiries, by giving them the best and most satisfactory answers you can frame, and accommodate all your language to their capacity.

Give them, as far as possible, clear ideas of things, and teach them how to distinguish one thing from another by their different appearances, by their different properties, and by their different effects. Shew them how far some things agree with others, and how far they differ from them; and above all things teach them, as far as their young understandings will admit, to distinguish between appearances and realities, between truth and falsehood, between good and evil, between trifles and things of importance; for these are the most valuable pieces of knowledge and distinction, which can be lodged in the young understandings of children.

2. The memory is another faculty of the soul, which should be cultivated and improved: Endeavour carefully to impress on their minds things of worth and value. Such are, short and useful and entertaining stories, which carry in them some virtue recommended, some vice ridiculed or punished; various human and divine truths, rules of piety and virtue, precepts of prudence, &c. Repeat these things often to them by day and by night; teach them these things in verse and in prose; rehearse them in their ears at all proper seasons, and take occasion to make them repeat these things to you.

Be solicitous to know what it is they learn when they are out of your sight, and take good care that their memories be not charged with trifles and idle trumpery. The memory is a noble repository or cabinet of the soul, it should not be filled with rubbish and lumber. Silly tales and foolish songs, the conundrums of nurses, and the dull rhimes that are sung to lull children asleep, or to sooth a froward humour, should be generally forbidden to entertain those children where a good education is designed. Something more innocent, more solid, and more profitable may be invented instead of these fooleries. If it were possible, let a very few things be lodged in the memory of children which they need to forget when they are men.

The way to strengthen and improve the memory is to put it upon daily exercise. I do not mean that young children should be kept so close to their book as to be crammed with lessons all the day long, and made to receive and sustain a heavy load every hour. The powers of the soul, especially such as act in close concert with the body, and are so much aided by the brain, may be over-burdened and injured, as well as the limbs: The mind may be perplexed and confounded, the head may be over-strained and weakened, and the health impaired in those tender years of life, by an excessive imposition on the memory: The teachers of children should have some

prudence, to distinguish their ages and their several capacities: They should know how to avoid extremes.

But, in general, it may be said, that the powers of the mind, as well as those of the body, grow stronger by a constant and moderate exercise. Every day let the memory of a child be entrusted with something new: Every day let some lessons be learned: And every Lord's-day at least, even in their youngest years, let them learn by heart some one text of scripture, chiefly that on which the minister preaches: This will grow up in time to a considerable treasure of scriptural knowledge, which will be of unspeakable use to them in the Christian life. I have known children, who from their early years have been constantly trained up and taught to remember a few sentences of a sermon besides the text, and by this means have grown up by degrees to know all the distinct parts and branches of a discourse, and in time to write down half the sermon after they came home, to their own consolation, and the improvement of their friends: Whereas those who have never been taught to use their memories in their younger parts of life, lose every thing from their thoughts when it is past off from their ears, and come home from noble and edifying sermons, pleased, it may be, with the transient sound, and commending the preacher, but uninstructed, unimproved, without any growth in knowledge or piety.

3. The judgment is another natural power of the mind, which should be exercised and improved in children. They should be taught to pass no judgment on men or things rashly or suddenly, but to withhold their judgment till they see sufficient reason to determine them. To this end, shew them in little common instances how often they are deceived when they judge on a sudden, without due consideration, and how often they are forced to change their opinions. Put them in mind how soon they have found themselves mistaken, when they have given their opinions too hastily. This will make them cautious, and afraid of being so rash, either in praising one thing or in condemning another.

Teach them to judge, not merely by outward show and appearance, but by searching things to the bottom. Convince them that every man who hath fine clothes is not rich; and that every man who talks hard words is not wise or learned; that every one who wears a red coat is not a soldier; nor is every person good-humoured, who speaks very complaisant things in company. Take frequent occasion to shew them how much they will be mistaken if they judge immediately by outward appearances of things.

Tell them that they must not judge of things by custom, nor by the common opinions of the multitude, nor by the practices of the rich and the great: For all these things may deceive them: But that they must judge of things merely by reason, except in matters of religion, and there they must judge rather by scripture or the word of God. Let them know, that customs change and alter, and the customs of one age or of one nation differ greatly from those of another; but that the nature and the reason of things is still the same, and that scripture is the constant and unchangeable rule of our religion.

To confirm this, let them be informed that it was the custom of our ancestors in England, and it is now the custom in France and Spain, to say their prayers in Latin, and to worship images; but it is a sinful custom, though all the multitudes of the common people agree in it, and though the great and rich practise it also. Nor is our present custom in Great Britain, of praying in English and worshipping no images, to be

esteemed the right way of worship because it is the custom of the nation, but because it is agreeable to the word of God, which forbids us to worship images, or to pray in an unknown tongue.

Take every occasion to guard them against prejudices, and passing a judgment on men or things upon insufficient grounds.

4. The reasoning powers of the mind should be cultivated and improved in children. This is very near akin to the former, and therefore I shall be very brief here.

Whensoever children give you their opinion of any thing, ask them to give you also the reason why they are of that opinion: Whensoever they desire or wish for any thing, or shew an aversion to it, enquire what is the reason of their desire or aversion: When they have done any thing of their own will, ask them the reason why they did it. And when you do any thing that is for their good, shew them the reason why you do it, and convince them that it was fit and necessary to be done, though perhaps it was not so pleasing to them.

By calling their young reason thus into exercise, you will teach them wisdom betimes: You will awaken manly thoughts within them, and soon lead them to a rational and manly conduct in their childish years: By this means also you will always have a handle to take hold of, in order to persuade them to their duty and to save them from mischief. But if their reasoning powers be neglected, you will train them up like the horse and the mule who have no understanding: They will grow like brutes in the shape of men, and reason will have but little power over them in the following parts of life.

5. Conscience is another natural power of the soul, wherein the principles of virtue and rules of duty to God and man are to be laid up: It is something within us that calls us to account for our faults, and by which we pass a judgment concerning ourselves and all our actions.

Children have a conscience within them, and it should be awakened early to its duty. They should be taught to reflect and look back upon their own behaviour, to call themselves often to account, to compare their deeds with those good rules and principles laid up in their minds, and to see how far they have complied with them, and how far they have neglected them. Parents should teach their children to pay a religious respect to the inward dictates of virtue within them, to examine their actions continually by the light of their own consciences, and to rejoice when they can approve themselves to their own minds, that they have acted well according to the best of their knowledge: They ought also to attend to the inward reproofs of conscience, and mourn and be ashamed, and repent when they have sinned against their light. It is of admirable use toward all the practices of religion and every virtue, to have conscience well stored with good principles, and to be always kept tender and watchful; it is proper that children should learn to reverence and obey this inward monitor betimes, that every wilful sin may give their consciences a sensible pain and uneasiness, and that they may be disposed to sacrifice every thing else to considerations of conscience, and to endure any extremities rather than act contrary to it.

I proceed in the next place to consider the several powers of the body, which ought to be regulated and managed by the due instruction of children in their younger years. Now as the God of nature has given children eyes, and tongues, and feet, and arms,

and hands, it is expedient that parents should teach their children the proper use of them.

1. The God of nature hath given them eyes. Let their parents teach them to use these eyes aright. Would it be amiss in me here to give a hint or two of this kind? May not children be warned against a staring look, against stretching their eye-lids into a glare of wildness? May they not be forbid to look aside on any object in a squinting manner, when their faces are turned another way? Should they not be instructed to look directly with their face turned to the thing they look at? May they not be taught with due courage to look in the face of the person they speak to, yet with an humble modest aspect, as befits a child? A becoming courage and a becoming modesty dwell much in the eye.

Some children should be often admonished to lay aside a gloomy and a frowning look, a scowling air, an uneasy and forbidding aspect. They should be taught to smooth the ruffles of their brow, and put on a lively, pleasing, and cheerful countenance among their friends: Some there are who have all these graces by nature, but those who have them not may be corrected and softened by the care of parents in younger years.*

2. Let parents teach children to use their tongues properly and agreeably; not only to speak, but to pronounce their words plain and distinct. Let them be instructed to keep due and proper distances between their words and sentences, and not speak in a swift hurry, with a tumult of syllables and clutter upon their lips, which will sound like a foreign gibberish, and never be understood. Nor should they drawl out their words in a slow long tone, which is equally ungraceful and disagreeable.

There are two other common faults in speaking, and where they are found they should be corrected early in children.

The one is lisping, which is a pronunciation of the letter S or Z, or C, before E and I, as though it were TH. Thus, instead of *spice* they cry *thpithe*, instead of *cease* they say *theathe*. This may be cured by teaching them to pronounce a few such words as these, where the sound of the letter S prevails, with their teeth close shut: And by forbidding them to put their tongue between their teeth at any time, except when TH is to be pronounced.

The other fault is stammering, which I suppose may be commonly prevented or cured by teaching children not to speak much, and to speak slow always; and they should be warned against all anger, or hastiness, or eagerness of spirit; for such a temper will throw out their words faster than the organs of speech can accommodate themselves to form the syllables, and thus bring a hurry and confusion into their speech: And they should also gain a good degree of courage or becoming assurance, and not speak with much concern or fear; for fear will stop the organs of speech, and hinder the formation of words.

But I insist no longer on the use of the tongue in speaking.

3. As God hath given them feet, let parents teach them to stand firm and strong,

* It may here be recollected, by the way, that a gloominess of aspect does not always arise from a malignity of temper, but sometimes from fear of displeasing and incurring reproof, and is therefore often to be removed by speaking kindly to children, and encouraging them with expressions of candour and tenderness. To know how in such cases to divert a child, and make him cheerful and happy in the company of a parent, is none of the least important cares of education.

and to walk in a becoming and decent manner, without waddling from side to side, without turning either or both of their feet inward, without little jerks in their motion, or long strides, or any of those awkwardnesses which continue with many persons to old age, for want of having these irregularities corrected when they were young. Children should be indulged in their sports sometimes, in running swiftly, and in leaping, where there is no danger, in order to exercise their limbs, and make them pliant and nimble, strong and active, on all occasions.

4. As to their arms and hands, they were formed, not to lie folded in the bosom, but to be engaged in some useful work; and sometimes, with due moderation, in robust and hardy exercise and toil; not so as to over-strain their joints, but to acquire firmness of strength by exercise.

And more especially those who are to get their bread by their hands should be inured to toilsome and vigorous labours almost from their infancy: They should be accustomed to work in heat and cold, and to bear rougher exercises and fatigues of body, that they may be fit to endure hardships, and go through those difficulties which their station of life may call them to, without any injury or inconvenience. And it is desirable that the sons of all families should be in some degree inured to such difficulties as these, which men of all ranks are sometimes called to encounter.

If some fond and tender mothers had brought up their children in this hardy manner, they had not now, in all human probability, been mourning over their graves. In their younger years they would scarcely let them set the sole of their foot to the ground, nor suffer the wind to blow upon them: Thus they grew up in a state of tenderness and infirmity, sickly and feeble creatures: A sudden heat or a cold seized them; their natures, which were never accustomed to bear hardship, were unable to resist the enemy; a fever kindled in their blood, or a catarrh or cough injured their lungs, and early buried their parents' hopes in the dust.

Thus I have finished the second general head of instruction; that is, children should be instructed to exercise and improve their natural powers, both of mind and body: And this is one necessary part of a good education, which parents and other teachers should attend to betimes.

SECTION III.

SELF-GOVERNMENT.

Children should be instructed in the art of self-government. They should be taught, as far as possible, to govern their thoughts: To use their wills to be determined by the light of their understandings, and not by headstrong and foolish humour; they should learn to keep the lower powers of nature under the command of their reason: They should be instructed to regulate their senses, their imagination, their appetites, and their passions. Let it be observed that I speak of these things in this place, not as a part of religion, though they are an important part of it, but give it as a direction exceedingly useful to all the purposes of human life in this world.

1. Their thoughts and fancies should be brought under early government. Children should be taught, as far as possible, to keep their thoughts and attention fixed upon what is their proper business; and to withhold them from roving and wandering away

from the work in which they are engaged. Many children have such wild fluttering fancies, that they will not be easily confined to fix upon one object for any considerable time: Every flying feather, every motion of any person or thing that is near them, every sound, or noise, or shadow, calls them away from their duty. When they should employ their eyes on their book or their work, they will be gazing at every thing besides their task; they must rise often to the window to see what passes abroad, when their business lies within.

This volatile humour, if not gently altered and wisely corrected in early years, will have an unhappy influence to hinder them for ever from attaining any great excellence in whatsoever business they undertake. Children should be taught therefore to call in their wandering thoughts, and bind them to the work in hand, till they have gone through it and finished it.

Yet this sort of wandering folly should not be chastised severely in young children, nor should it be subdued with violence, by too close and rigorous a confinement to many long hours of labour or study, in that early and tender part of life; such a conduct might break or overwhelm an active and sprightly genius, and destroy all those seeds of curiosity which promise well for maturer years: But proper and agreeable methods should be used to persuade and incline the young learner to attend to his present employment. It is far better to fix the thoughts to duty by allurement than by severity; but some way or other it ought to be endeavoured, at least in a good degree.

This fixedness of the mind and active powers is not only of great service to attain useful knowledge, or to learn any business in common life, but it is of considerable advantage in religion, in attendance on divine worship, either prayer, preaching, or meditation; where the mind is subject to a thousand distractions, for want of being taught to fix the attention in younger years. Persons who have well learned the art of governing their thoughts, can pursue a train of thinking while they walk through the streets of London, nor will all the noise and hurry of that busy place break the thread of their meditations. A happy attainment this, and a felicity which but few arrive at!

2. Children should be also instructed to govern their inclinations and wishes, and to determine their wills and their choice of things, not by humour and wild fancy, but by the dictates of reason. Some persons, even in their mature years, can give no other account why they choose and determine to do this or that, but because they have a fancy for it, and they will do it. I will because I will, serves instead of all other reasons. And in the same manner they manage their refusal or dislike of any thing. I hate to do this thing; I will not go to this place, nor do that work; I am resolved against it; and all from mere humour. This is a conduct very unbecoming a reasonable creature; and this folly should be corrected betimes, in our early parts of life, since God has given us understanding and reason to be the guide of our resolutions, and to direct our choice and all our actions.

3. Appetite is another thing which should be put under strict government, and children should be taught betimes to restrain it. That of the taste is the first thing that gets the ascendant in our younger years, and a guard should be set upon it early. What an unbecoming thing is it for children to be craving after every dish that comes to a table? And this they will generally do, if they have never been taught to bridle their craving. They must eat of all the pickles and sauces and high seasoned meats, and gorge themselves with a medley of inconsistent dainties; and without any restraint,

lest little master should be froward, or lest little miss should grow out of humour with her dinner. How often do they make a foul inroad on their health by excess of eating, being tempted farther than nature requires by every luscious bit which is within their sight? How frequently doth this indulgence vitiate their stomach, ruin their constitution, weaken the springs of nature, and destroy the powers of animal life betimes? How many graves are filled, and funeral vaults crowded with little carcases which have been brought to untimely death by the foolish fondness of a parent or a nurse, giving the young creatures leave to eat every thing they desire? Or, if they happen by strength of constitution to survive this pestilence, how often do they grow up young gluttons, and place their happiness in the satisfaction of the taste? They are deaf to all the rules of virtue and abstinence all their lives, because they were never taught to deny themselves when they were young. O it is a mean and shameful thing to be a slave to our taste, and to let this brutal appetite subdue reason and govern the man. But if appetites must be gratified in the child, they will grow strong in the years of youth, and a thousand to one but they overpower the man also.

Let but fond parents humour their little offspring, and indulge their children to sip wine frequently, and they will generally grow up to the love of it long before nature needs it; and by this means they will imagine drams are daily necessary for their support, by that time they are arrived at the age of man or woman. Thus nature is soon burned up, and life pays for the deadly draught. The foundation of much gluttony and drunkenness, of many diseases that arise from intemperance, and of many an untimely death, is laid in the nursery.

An excess of niceness in pleasing the palate is a foolish and dangerous humour, which should never be encouraged by parents, since the plainest food is most healthful for all persons, but especially for children: And in this respect they should be under the conduct of their elders, and not always choose for themselves. This conduct and discipline will train them up to virtue and self-denial, to temperance and frugality, to a relish of plain and wholesome food, to the pleasures of active health, and to a firm and cheerful old age.

The indulgence of a nice appetite in children, is not only the reason why they are so often sick, but at the same time it makes them so humourous and squeamish, that they can scarcely be persuaded to swallow a medicine which is necessary for their recovery. What a long, tedious, and tiresome business is it to wait on some children whole hours together, while all the soft persuasions and flatteries of a mother cannot prevail with them take a nauseous spoonful, or a bitter bolus, though their life may seem to depend on it? They have been taught to make an idol of their taste, and even in the view and peril of death, they can scarcely be persuaded to affront their idol, and displease their palate with a draught, or even a pill, which disgusts it.

There are other appetites, if I may so call them, beside that of the taste, which children are ready to indulge too far, if not limited and corrected by the wisdom of their parents. Their eyes are never satisfied with seeing, nor their ears with hearing. Some young persons cannot hear of a fine show but they must needs see it: Nor can they be told of a concert of music, but they must needs hear it, though it creates an expense beyond their circumstances, and may endanger their health or their virtue.

I confess freely, that I would recommend the sight of uncommon things in nature or art, in government civil or military, to the curiosity of youth. If some strange

wild beasts or birds are to be shewn, if lions and eagles, ostriches and elephants, pelicans and rhinoceroses, are brought into our land, if an ingenious model of Solomon's temple, or some nice and admirable clock-work, engines or moving pictures, &c. be made a spectacle to the ingenious; if a king be crowned, or a public triumph proceed through the streets; when an army is reviewed by a prince; when an ambassador makes a public entry; or when there is a public trial of criminals before a judge; I will readily allow these sights are worthy of the attendance of the younger parts of mankind, once at least, where it may be done with safety, and without too great hazard or expense. Most of these are things which are not often repeated, and it is fit that the curiosity of the eyes should be so far gratified as to give people, once in their lives, an opportunity of knowing what these things are, that their minds may be furnished with useful ideas of the world of nature or art, and with some notion of the great and uncommon scenes and appearances of the civil life. But for children to haunt every public spectacle, to attend with constancy every lord mayor's show, to seize every opportunity of repeating these sights, suffering nothing to escape them that may please their senses, and this too often without any regard to their religion, their virtue, or their health; this is a vanity which ought to be restrained by those to whom God and nature hath committed the care of their instruction, and who have a just and natural authority over them. But of this and some other subjects akin to it, I may have occasion to speak more in the following parts of this discourse, when I professedly treat on the article of restraint.

Thus I have shown how the appetites and inclinations of children should be put under discipline, and how they may be taught self-government in this respect.

4. The passions or affections are the last things which I shall mention: These appear very early in children to want a regulation and government. They love and hate too rashly, and with too much vehemence; they grieve and rejoice too violently and on the sudden, and that for mere trifles: Their hopes and fears, their desires and their aversions are presently raised to too high a pitch, and upon very slight and insufficient grounds. It becomes a wise parent to watch over these young emotions of their souls, and put in a word of prudent caution, as often as they observe these irregularities.

Let children be taught early, that the little things for which they are so zealous, for which they grieve or rejoice so impetuously, are not worthy of these affections of their souls; shew them the folly of being so fond of their trifles, and of vexing and growing fretful for the loss of them. Inform them what a happiness it is to have few desires and few aversions, for this will preserve them from a multitude of sorrows, and keep their temper always serene and calm: Persuade them never to raise their hopes very high of things in this world, and then they will never meet with great disappointments. Teach them moderation in all these workings of their spirits; and inform them that their passions should never be laid out thus on objects which do not deserve them, nor rise higher than the occasion requires.

Teach bashful and timorous children that they need be ashamed of nothing but what is evil; that they should fear God in the first place, and serve him, and then they need not be afraid of men, or of any thing that threatens mischief to them; for the almighty God will be their friend and defence. Engage their fear and their love in the first place on God, the most proper and supreme object of them: Let their hopes, their joys, and their sorrows, as soon as possible, be tinctured with religion: Set their young affections

at work on the most needful and important objects of them in early life, and this will have a sweet and powerful influence on the better regulation of them with regard to all sensible things.

Above all, let them know that they must govern their anger, and not let it break out on every slight occasion. It is anger that is eminently called passion among children, and in the language of common life. This therefore should eminently have a constant guard set upon it. Shew them how unreasonable and unmanly a thing it is to take fire at every little provocation: How honourable and glorious to forgive an injury; how much like God, and like the best of men. Let them know what Solomon would inform them, *That the patient in spirit is better than the proud in spirit: That he that is slow to anger is better than the mighty, and he that ruleth his spirit than he that taketh a city.* Teach them to put away their little quarrels and resentments, and to forget and bury them in love. Let them be put in mind, that though *anger* may happen to rise a little in a good man, yet it *rests* or abides only *in the bosom of a fool;* and therefore they should never grow sullen, *nor let the sun go down upon their wrath.*

The occasions of childish resentment and the risings of anger are ready to return often, and therefore they should often have such warnings given them, and such instructions repeated. Tell them how lovely a thing it is to be meek and free from passion, and how much such children are beloved of all. Instruct them how much it tends to their own peace, to suffer nothing to ruffle and discompose them: And when their little hearts are ready to swell again and grow big within them, and their wrath takes sudden fire, put in some pretty soft word to cure the return of this inward swelling, to quench the new flame that is kindling in their bosom, and to assuage the rising storm. Teach them by degrees to get an habitual conquest over this disorder of nature in youth, and you will lay a foundation for their deliverance from a thousand mischiefs in the following years and events of life.

This shall suffice for the third head of instruction which relates to self-government: I have dwelt the longer upon it, because it is of so great and evident importance towards the ease and happiness of life, as well as so considerable a part of religion; and men can hardly ever get so successful a victory over themselves, unless they begin when they are children.

SECTION IV.

THE COMMON ARTS OF READING AND WRITING.

THE next thing that I shall mention as a matter of instruction for children, is, the common arts of reading, spelling, and writing.

Writing is almost a divine art, whereby thoughts may be communicated without a voice, and understood without hearing: To these I would add some small knowledge of arithmetic or accounts, as the practice of it is in a manner so universal in our age, that it does almost necessarily belong to a tolerable education.

The knowledge of letters is one of the greatest blessings that ever God bestowed on the children of men: By this means, mankind are enabled to preserve the memory of

things done in their own times, and to lay up a rich treasure of knowledge for all succeeding generations.

By the art of reading we learn a thousand things which our eyes can never see, and which our thoughts would never have reached to: We are instructed by books in the wisdom of ancient ages; we learn what our ancestors have said and done, and enjoy the benefit of the wise and judicious remarks which they have made through their whole course of life, without the fatigue of their long and painful experiments. By this means children may be led, in a great measure, into the wisdom of old age. It is by the art of reading that we can sit at home, and acquaint ourselves with what has been done in the distant parts of the world. The histories and the customs of all ages and all nations are brought, as it were, to our doors. By this art we are let into the knowledge of the affairs of the Jews, the Greeks, and the Romans, their wars, their laws, and their religion; and we can tell what they did in the nations of Europe, Asia, and Africa, above a thousand years ago.

But the greatest blessing that we derive from reading, is the knowledge of the holy Scriptures, wherein God has conveyed down to us the discoveries of his wisdom, power, and grace, through many past ages; and whereby we attain the knowledge of Christ, and of the way of salvation by a Mediator.

It must be confessed that in former ages, before printing was invented, the art of reading was not so common even in polite nations, because books were much more costly, since they must be all written with a pen, and were therefore hardly to be obtained by the bulk of mankind: But since the providence of God has brought printing into the world, and knowledge is so plentifully diffused through our nation at so cheap a rate, it is pity that any children should be born and brought up in Great Britain without the skill of reading; and especially since by this means, every one may see with his own eyes, what God requires of him in order to eternal happiness.

The art of writing is also so exceedingly useful, and is now grown so very common, that the greatest part of children may attain it at an easy rate: By this means we communicate our thoughts and all our affairs to our friends at never so great a distance: We tell them our wants, our sorrows, and our joys, and interest them in our concerns, as though they were near us. We maintain correspondence and traffic with persons in distant nations, and the wealth and grandeur of Great Britain is maintained by this means. By the art of writing, we treasure up all things that concern us in a safe repository; and, as often as we please, by consulting our paper records, we renew our remembrance of things that relate to this life or the life to come: And why should any of the children of men be debarred from this privilege, if it may be attained at a cheap and easy rate, without intrenching upon other duties of life, and without omitting any more necessary business that may belong to their stations?

I might add here also, true spelling is such a part of knowledge as children ought to be acquainted with; since it is a matter of shame and ridicule in so polite an age as ours, when persons who have learned to handle the pen cannot write three or four words together without a mistake or blunder; and when they put letters together in such an awkward and ignorant manner, that it is hard to make sense of them, or to tell what they mean.

Arithmetic, or the art of numbers, is, as was observed before, to be reckoned also a necessary part of a good education. Without some degrees of this knowledge, there is

indeed no traffic among men. And especially it is more needful at present, since the world deals much more upon trust and credit than it did in former times; and therefore the art of keeping accounts is made, in some measure, necessary to persons even in meaner stations of life, below the rank of merchants or great traders. A little knowledge of the art of accounts is also needful, in some degree, in order to take a true survey, and make a just judgment of the common expenses of a person or a family: But this part of learning, in the various degrees of it, is more or less useful and needful, according to the different stations and businesses for which children are designed.

As the sons of a family should be educated in the knowledge of writing, reading, spelling, and accounts, so neither should the daughters be trained up without them. Reading is as needful for one sex as the other; nor should girls be forbidden to handle the pen or to cast up a few figures, since it may be very much for their advantage in almost all circumstances of life, except in the very lowest rank of servitude or hard labour. And I beg leave here to entreat the female youth, especially those of better circumstances in the world, to maintain their skill in writing which they have already learned, by taking every occasion to exercise it: And I would fain persuade them to take pains in acquainting themselves with true spelling, the want of which is one reason why many of them are ashamed to write; and they are not ashamed to own and declare this, as though it were a just and sufficient excuse for neglecting and losing the use of the pen.

SECTION V.

OF A TRADE OR EMPLOYMENT.

In a good education it is required also that children, in the common ranks of life, be brought up to the knowledge of some proper business or employment for their lives; some trade or traffic, artifice or manufacture, by which they may support their expenses, and procure for themselves the necessaries of life, and by which they may be enabled to provide for their families in due time. In some of the Eastern nations, even persons of the highest rank are obliged to be educated to some employment or profession; and perhaps that practice has many advantages in it: It engages the younger years in labour and diligence, and secures from the mischievous effects of sloth, idleness, vanity, and a thousand temptations.

In our nation, I confess, it is the custom to educate the children of noblemen, and the eldest sons of the gentry, to no proper business or profession, but only to an acquaintance with some of the ornaments and accomplishments of life, which I shall mention immediately. But perhaps it would be far happier for some families, if the sons were brought up to business, and kept to the practice of it, than to have them exposed to the pernicious inconveniencies of a sauntering and idle life, and the more violent impulse of all the corrupt inclinations of youth.

However, it is certain, that far the greater part of mankind must bring up their children to some regular business and profession, whereby they may sustain their lives and support a family, and become useful members to the state. Now in the choice of such a profession or employment for children, many things are to be consulted.

1. The circumstances and estate of the parent; whether it will reach to place out the child as an apprentice, to provide for him materials for his business or trade, and to support him till he shall be able to maintain himself by his profession. Sometimes the ambition of the parent and the child hath fixed on a trade far above their circumstances, and in consequence of which the child hath been exposed to many inconveniencies, and the parent to many sorrows.

2. The capacity and talents of the child must also be considered. If it be a profession of hard labour; hath the child a healthy and firm constitution, and strength of body equal to the work? If it be a profession that requires the exercise of fancy, skill, and judgment, or much study and contrivance; then the question will be, hath the lad a genius capable of thinking well, a bright imagination, a solid judgment? Is he able to endure such an application of mind as is necessary for the employment?

3. The temper and inclination of the child must be brought into this consultation, in order to determine a proper business for life. If the daily labour and business of a man be not agreeable to him, he can never hope to manage it with any great advantage or success. I knew a bricklayer, who professed that he had always an aversion to the smell of mortar: And I was acquainted once with a lad who began to learn Greek at school, but he complained it did not agree with his constitution. I think the first of these ought to have been brought up to work in glass or timber, or any thing rather than in bricks: As for the other, to my best remembrance, he was wisely disposed of to a calling wherein he had nothing to do with Greek.

And here I would beg leave to desire, that none might be encouraged to pursue any of the learned professions, that is, divinity, law, or physic, who have not the signs of a good genius, who are not patient of long attention and close application to study, who have not a peculiar delight in that profession which they choose, and withal a pretty firm constitution of body; for *much study is a weariness to the flesh*, and the vigour of nature is sooner impaired by laborious thoughtfulness than by the labour of the limbs.

4. It should be also the solicitous and constant care of parents, when they place out their children in the world, to seek out masters for them who profess serious religion, who practise all moral virtues, and keep good orders and good hours in their family. The neglect of this concern has been the ruin of a thousand youths in our day; and notwithstanding the sensible mischief arising from this negligence, yet there is still too little care taken in a matter of so great importance.*

Thus much for this part of the education of sons. But you will say then, what business of life must daughters be brought up to? I must confess, when I have seen so many of the sex, who have lived well in the time of their childhood, grievously exposed to many hardships and poverty upon the death of their parents, I have often wished there were more of the callings or employments of life peculiarly appropriated to women, and that they were regularly educated in them, that there might be a better provision made for their support. What if all the garments which are worn by women were so limited and restrained in the manufacture of them, that they should all be made only by their

* This danger arises, in a great degree, from the immoderate love of pleasure, which so generally prevails, and leads masters into parties and engagements, especially on the Lord's day; which not only occasions the neglect of religious instruction and family prayer on the evening of it, but sets an example to servants, which they think themselves authorized to follow, though it be generally to their own destruction.

own sex? This would go a great way toward relief in this case: And what if some of the easier labours of life were reserved for them only? But this is not my province.

However it may be as to this matter, it is the custom of the nation, and indeed it hath been the custom of most nations and ages, to educate daughters in the knowledge of things that relate to the affairs of the household, to spin and to use the needle, both for making garments and for the ornaments of embroidery: They have been generally employed in the preparation of food, in the regular disposal of the affairs of the house for the conveniences and accommodations of human life, in the furniture of the rooms, and the elegancies of entertainment. Sarah *made ready three measures of meal and kneaded it, and made cakes upon the hearth;* Gen. xviii. 6. And the *women of Israel that were wise-hearted, did spin with their hands both blue, and purple, and scarlet, and fine linen, for the tabernacle;* Exod. xxxv. 25. *Women shall bake your bread;* Lev. xxvi. 16. *Women sew pillows and make kerchiefs;* Ezek. xiii. 18. which words, though perhaps they are a metaphor in that text, yet denote the office or work of women. And Dorcas *made coats and garments for the poor;* Acts ix. 36, 39. I might cite many ancient heathen authors to prove the same thing among the Greeks and Romans, if it were needful.

Some of these things are the constant care and labour of women in our day, whereby they maintain themselves: The most laborious parts of them belong to the poor. And it is the opinion of the best judges, that, even in superior and wealthy circumstances, every daughter should be so far instructed in them, as to know when they are performed aright, that the servants may not usurp too much power, and impose on the ignorance of the mistress. Nature and providence seem to have designed these offices for the sex in all ages and in all nations, because while the men are engaged in harder and more robust labours, and are often called abroad on business, the women are more generally accustomed to keep house and dwell at home; and the word of God, as well as the custom of human life, recommends it; *Tit.* ii. 5. 1 *Tim.* v. 14.

SECTION VI.

RULES OF PRUDENCE.

All children should have some instruction given them in the conduct of human life, some necessary rules of prudence, by which they may regulate the management of their own affairs, and their behaviour towards their fellow-creatures. Where all other sorts of knowledge are conferred upon children, if this be wanting, they make but a contemptible figure in the world, and plunge themselves into many inconveniences.

Some of these rules of prudence are of a general nature, and necessary at all times, and upon all occasions: Others are more particular, and proper to be used according to the various occurrences of life.

If I were to enquire what are the foundations of human prudence, I should rank them under these three heads.

1. A knowledge of ourselves. Here every one should be taught to consider within himself, what is my temper and natural inclination; what are my most powerful appetites and my prevailing passions; what are my chief talents and capacities, if I have

any at all; what are the weaknesses and follies to which I am most liable, especially in the days of youth; what are the temptations and dangers that attend me; what are my circumstances in the world; and what my various relations to mankind round about me; what are my constant, and what my occasional duties; what are the inward or outward advantages that attend me, or the disadvantages under which I labour? A wise and just survey of all these things, and keeping them always in mind, will be of unspeakable use to us in the conduct of life, that we may set our chief guard upon our weak side, and where our greatest dangers lie: That we may employ our talents aright, and seize all advantages to improve them for the best purpose, and proceed in the shortest way to piety, usefulness, and peace.

2. The knowledge of mankind is also necessary to acquire prudence. And here young persons should not only be taught what is the general nature and capacity, the virtues and the vices, and the follies of mankind; but they should be informed also, or at least should be taught to observe more particularly, what are the peculiar tempers, appetites, passions, powers, good and evil qualities of the persons with whom they have most to do in the world; that they may learn to behave wisely with regard to others, and that they may make a proper improvement of all the brighter and darker characters which they observe amongst men, both for their own advantage and for the benefit of their fellow-creatures. This may have a happy influence to lead them to avoid the vices and follies which have plunged others into mischief, to imitate the virtues of those who have behaved well in life, and to secure themselves from any dangers and miseries, as well as to pity the weaknesses and sorrows of mankind, and afford them a willing and cheerful relief.

3. The knowledge of the things of the world, and the various affairs of human life, must be included as one of the chief foundations of prudence. It would be endless to run over particulars of this kind: But in a special manner young persons should apply themselves to know those things which most nearly concern them, and which have the most immediate relation to their own business and duty, to their own interests and welfare: And it is a valuable part of wisdom to neglect other things, and not to waste our time and spirits in them, when they stand in any competition with our proper and most important work, whether we consider ourselves as men or as Christians.

Solomon tells us, *Eccles.* iii. 1, 17. and viii. 5, 6. "There is both time and judgment for every work, and for every purpose under the heaven:" And that "a wise man's heart discerneth both time and judgment;" that is, he judgeth well concerning what is to be done, and the time when to do it: And therefore *the misery of man is great upon him,* because he knows not this time and judgment, he doth neither discern what is proper to be done, nor the proper season of doing it. Prudence consists in judging well what is to be said, and what is to be done, on every new occasion; when to lie still and when to be active; when to keep silence and when to speak; what to avoid and what to pursue; how to act in every difficulty; what means to make use of to compass such an end; how to behave in every circumstance of life, and in all companies; how to gain the favour of mankind in order to promote our own happiness, and to do the most service to God and the most good to men, according to that station we possess, and those opportunities which we enjoy.

For this purpose there is no book better than the *Proverbs of Solomon.* Several of the first chapters seem to be written for young men, under the name of Solomon's

son: And all the rest of them should be made familiar to youth by their frequent converse with them, and treasuring them up in their head and heart.

Among human writings of this kind, perhaps the book called *Ecclesiasticus*, though it be among the apocryphal writings, is equal to the best of the ancients. And among the moderns, I know not a better collection than the little book of Directions, Counsels, and Advices, lately published by Dr. Fuller for the use of his son: Though I could wish he had rendered it more universally acceptable to all readers, by avoiding some severities on the other sex; and that he had spared his little railleries on the name of saints, though those offensive sentences are but few.

SECTION VII.

THE ORNAMENTS AND ACCOMPLISHMENTS OF LIFE.

The last part of instruction which I include in the idea of a good education, is, an instruction of youth in some of the useful ornaments and accomplishments of life.

It has been the custom of our nation for persons of the middle and the lower ranks of life, who design their children for trades and manufactures, to send them to the Latin and Greek schools. There they wear out four or five years of time in learning a number of strange words, that will be of very little use to them in all the following affairs of their station: And this very learning also is generally taught in a very tiresome and most irrational method, when they are forced to learn Latin by grammars and rules written in that unknown tongue. When they leave the school, they usually forget what they have learned, and the chief advantage they gain by it, is, to spell and pronounce hard words better when they meet them in English: Whereas this skill of spelling might be attained in a far shorter time, and at an easier rate, by other methods,* and much of life might be saved and improved to better purposes.

As for the sons of those who enjoy more plentiful circumstances in the world, they may be instructed in the Latin and Greek languages for several valuable ends in their station: And especially those who design the learned professions, ought thoroughly to understand them; and such as pursue the study of divinity must be acquainted also with Hebrew and Chaldee, that they may read the Old Testament in its original language, as well as the New.

The French is now-a-days esteemed also an accomplishment to both sexes. If they have time enough, which they know not how to employ better, and a good memory, I would not forbid it. There are several good books written in that language, which are not unworthy of our perusal: And there are many words now introduced in the English language, borrowed and derived from thence, as well as from the Latin and Greek; so that it may not be improper for an English gentleman to learn these tongues, that he may understand his own the better. I add also, that if persons have much acquaintance with the French nation, or have occasion to converse with foreigners at court or in the city, or if they design to travel abroad, the French is a necessary tongue, because it is so much spoken in Europe, and especially in courts. But otherwise, there

* See my Art of Reading and Writing, Chap. 21.

are so many of the valuable writings of French authors perpetually translated into English, that it is a needless thing to go through much difficulty or take much pains in attaining it. I am inclined to believe that, except in the cases above-mentioned, few have found the profit answer the labour. As for those persons who are bred up to traffic with other nations, they must necessarily learn the language of those nations; and this I reckon not among their accomplishments, but consider it as rather a part of their proper business in life.

In short, it is a thing of far greater value and importance, that youth should be perfectly well skilled in reading, writing, and speaking their native tongue in a proper, a polite, and graceful manner, than in toiling among foreign languages. It is of more worth and advantage to gentlemen and ladies to have an exact knowledge of what is decent, just, and elegant, in English, than to be a critic in foreign tongues. The very knowledge of foreign words should be improved to this purpose: And in order to obtain this accomplishment, they should frequently converse with those persons and books which are esteemed polite and elegant in their kind.

Thus far concerning the knowledge of words. But the knowledge of things is of much more importance.

1. The young gentry of both sexes should be a little acquainted with logick, that they may learn to obtain clear ideas; to judge by reason and the nature of things; to banish the prejudices of infancy, custom, and humour; to argue closely and justly on any subject; and to cast their thoughts and affairs into a proper and easy method.

2. Several parts of mathematical learning are also necessary ornaments of the mind, and not without real advantage: And many of these are so agreeable to the fancy, that youth will be entertained and pleased in acquiring the knowledge of them.

Besides the common skill in accounts, which is needful for a trader, there is a variety of pretty and useful rules and practices in arithmetic, to which a gentleman should be no stranger: And if his genius lie that way, a little insight into algebra would be no disadvantage to him. It is fit that young people of any figure in the world should see some of the springs and clues whereby skilful men, by plain rules of reason, trace out the most deep, distant, and hidden questions; and whereby they find certain answers to those enquiries, which at first view seem to lie without the ken of mankind, and beyond the reach of human knowledge. It was for want of a little more general acquaintance with mathematical learning in the world, that a good algebraist and a geometer were counted conjurers a century ago, and people applied to them to seek for lost horses and stolen goods.

They should know something of geometry, so far at least as to understand the names of the various lines and angles, surfaces and solids; to know what is meant by a right line or a curve, a right angle and an oblique, whether acute or obtuse: How the quantity of angles is measured, what is a circle, a semicircle, an arch, a quadrant, a degree and minute, a diameter and radius: What we mean by a triangle, a square, a parallelogram, a polygon, a cube, a pyramid, a prism, a cone, an ellipsis, an oval, an hyperbola, a parabola, &c. and to know some of the most general properties of angles, triangles, squares, and circles, &c. The world is now grown so learned in mathematical science, that this sort of language is often used in common writings and in conversation, far beyond what it was in the days of our fathers. And besides, without some knowledge of this kind, we cannot make any further progress towards an acquaintance

with the arts of surveying, measuring, geography, and astronomy, which are so entertaining and so useful an accomplishment to persons of a polite education.

Geography and astronomy are exceedingly delightful studies. The knowledge of the lines and circles of the globes, of heaven and earth, is counted so necessary in our age, that no person of either sex is now esteemed to have had an elegant education without it. Even tradesmen and the actors in common life should, in my opinion, in their younger years, learn something of these sciences, instead of vainly wearing out seven years of drudgery in Greek and Latin.

It is of considerable advantage as well as delight for mankind to know a little of the earth on which they dwell, and of the stars and skies that surround them on all sides. It is almost necessary for young persons, who pretend to any thing of instruction and schooling above the lowest rank of people, to get a little acquaintance with the several parts of the land and the sea, that they may know in what quarter of the world the chief cities and countries are situated; that at the mention of the word Copenhagen, they may not grossly blunder and expose themselves, as a certain gentleman once did, by supposing it to be the name of a Dutch commander. Without this knowledge we cannot read any history with profit, nor so much as understand the common newspapers.

It is necessary also to know something of the heavenly bodies, and their various motions and periods of revolution, that we may understand the accounts of time in past ages, and the histories of ancient nations, as well as know the reasons of day and night, summer and winter, and the various appearances and places of the moon and other planets. Then we shall not be terrified at every eclipse, nor presage and foretel public desolations at the sight of a comet: We shall see the sun covered with darkness, and the full moon deprived of her light, without foreboding imaginations that the government is in danger, or that the world is come to an end. This will not only increase rational knowledge, and guard us against foolish and ridiculous fears, but it will amuse the mind most agreeably: And it has a most happy tendency to raise in our thoughts the noblest and most magnificent ideas of God by the survey of his works, in their surprising grandeur and divine artifice.

3. Natural philosophy, at least in the more general principles and foundations of it, should be infused into the minds of youth. This is a very bright ornament of our rational natures, which are inclined to be inquisitive into the causes and reasons of things. A course of philosophical experiments is now frequently attended by the ladies as well as gentlemen, with no small pleasure and improvement. God and religion may be better known, and clearer ideas may be obtained of the amazing wisdom of our Creator, and of the glories of the life to come, as well as of the things of this life, by the rational learning and the knowledge of nature that is now so much in vogue. If I were to recommend a book or two on this subject, which may usefully be read by the ladies as well as gentlemen, I know none better than Mr. Ray's *Wisdom of God in the Creation*, Dr. Derham's *Discourses* on the same subject, the Archbishop of Cambray's *Treatise of the Existence of God*, at least to the fiftieth section, Nieuenteit's *Religious Philosopher*, and Dr. Mather's *Christian Philosopher*. These things will enlarge and refine the understanding, improve the judgment, and bring the faculty of reasoning into a juster exercise, even upon all manner of subjects.

4. History is another accomplishment of youth and ornament of education. The narratives of the various occurrences in nations, as well as in the lives of particular persons, slide into younger minds with pleasure. These will furnish the soul in time with a treasure of knowledge, whence to derive useful observations, inferences and rules of conduct. These will enable us to gratify our acquaintance by rehearsing such narrations at proper seasons, and render our own company agreeable and useful to mankind.

5. Nor can our education be called completely elegant without something of poesy, in so very polite an age as this.

While I mention some knowledge of poesy as a proper ornament of youth, I would not be understood as though I recommended verse-making to every young gentleman and lady. It is an old proverb, that poets are born and not made. And though I have been too far betrayed, by an unguarded inclination, into attempts of this kind, in some of my former years, yet while I sometimes repent of having laid out so many days and hours of a short life in writing verses, I will not encourage others to practise it, unless they are blessed with a brighter genius, and find an insuperable bent and bias of soul that way: And even then let it be a diversion, and not a business.

The thing therefore which I here recommend to persons of a polite education, is, some acquaintance with good verse. To read it in the best authors, to learn to know, and taste, and feel a fine stanza, as well as hear it, and to treasure up some of the richest sentiments and expressions of the most admired writers, is all that I mean in this advice.

Nor is this a mere amusement or useless embroidery of the mind: It brightens and animates the fancy with a thousand beautiful images, it enriches the soul with many great and sublime sentiments and refined ideas, it fills the memory with a noble variety of language, and furnishes the tongue with speech and expression suited to every subject. It teaches the art of describing well, and of painting every thing to the life, and dressing up all the pleasing and the frightful scenes of nature and providence, vice and virtue, in their proper charms and horrors. It assists us in the art of persuasion, it leads us into a pathetic manner of speech and writing, and adds life and beauty to conversation.

How often have we been enabled to gild a gloomy hour of life, and to soften a rough and painful occurrence, by meditating and repeating the lines of some great poet? Between the colours and the harmony that belong to verse, our senses and our souls are sometimes sweetly entertained in a solitary retirement; and sometimes we entertain our friends agreeably, we regale them as with music and painting at once, and gladden the whole company.

But poetry hath still some sublimer powers. It raises our dying religion to a heavenly degree, and kindles a flame of holy love and joy in the heart. If the memory be well stored with devout songs, we shall never be at a loss for divine meditation: We may exalt the praises of God and our Saviour at all times, and feel our souls borne up, as on the wings of angels, far above this dusky globe of earth, till we have lost all its flattering vanities and its painful vexations. Poesy was first designed for the service of religion, and dedicated to the temple. Moses and David made divine and illustrious use of it. The royal Psalmist is raised on the wing of inspiration and sacred verse far above the level of the jewish ceremonies and shadows, and converses with heavenly

things, and sheds abroad the glories of the future Messiah, amidst the raptures of his sublime and inimitable poesy.

But it is time to descend and mention some of the accomplishments of animal nature. The first of this kind, and perhaps the nearest to poesy, is the art of singing. A most charming gift of the God of nature, and designed for the solace of our sorrows and the improvement of our joys. Those young persons who are blessed with a musical ear and voice, should have some instruction bestowed on them, that they may acquire this delightful skill. I am sorry that the greatest part of our songs, whereby young gentlemen and ladies are taught to practise this art, are of the amorous kind, and some of them polluted too. Will no happy genius lend a helping hand to rescue music from all its defilements, and to furnish the tongue with nobler and more refined melody? But singing must not be named alone.

Various harmony both of the wind and string were once in use in divine worship, and that by divine appointment. It is certain, then, that the use of these instruments in common life is no unlawful practice, though the New Testament has not ordained the use of it in evangelical worship. But if the voice be happily capable of this art, it is preferable to all instruments fashioned and composed by man: This is an organ formed and tuned by God himself. It is most easily kept in exercise, the skill is retained longest, and the pleasure transcends all the rest. Where an ode of noble and seraphic composure is set throughout to music and sung by an artful voice, while the spirit at the same time enjoys a devout temper, the joys of the soul and the sense are united, and it approaches to the scriptural ideas of the celestial state. Happy the youth who has a bright and harmonious constitution, with a pious turn of soul, a cheerful spirit, and a relish of sacred melody! He takes a frequent flight above this lower world, beyond the regions of sense and time; he joins the concert of the heavenly inhabitants, and seems to anticipate the business and the blessedness of eternity.

Shall I be allowed, after this, to mention drawing and painting as agreeable amusements for polite youth? Where the genius leads that way it is a noble diversion, and improves the mind. Nature has her share in this as well as in poesy; where nature inclines, let polite youth be taught to sketch a little on paper; let them have at least some taste of these arts, some capacity of being pleased with a curious draught, a noble painting, an elegant statue, and fine resemblances of nature. This is an ingenious and a graceful acquirement. Mr. Richardson's *Essay on the Theory of Painting* is the best book that I know on that subject, and sufficient to give a young gentleman a general knowledge of the art.

Shall I now name the art of fencing and of riding the managed horse as an accomplishment for gentlemen? These are exercises of a healthy kind, and may be useful in human life. Shall I speak of dancing, as a modish accomplishment of both sexes? I confess, I know no evil in it. This also is a healthful exercise, and it gives young persons a decent manner of appearance in company. It may be profitable to some good purposes, if it be well guarded against all the abuses and temptations that may attend it. It was used of old in sacred and civil rejoicings; *Exod.* xv. 20, 21. 2 *Sam.* vi. 14. 1 *Sam.* xviii. 6. It is certainly an advantage to have the body formed early to graceful motion, to which the art of dancing may contribute. But where it is much beloved and indulged, it has most sensible dangers, especially mixed dancing.

It leads youth too often and too early into company; it may create too much forwardness and assurance in the sex, whose chief glory is their modesty; it may kindle vain and vicious inclinations, and raise in young minds too great a fondness for the excessive gaieties and licentious pleasures of the age.

In all these affairs a wise parent will keep a watchful eye upon the child, while he indulges it in these gratifications of youth and inclination: A wise parent will daily observe, whether the son or the little daughter begin to be too much charmed with any of the gay ornaments and amusements of life; and, with a prudent and sacred solicitude, will take care lest any of them entrench on the more necessary and more important duties of life and religion. And according to this view of things, the parent's hand will either give a looser rein to the pursuit of these exercises, or will manage the propensities of the child with a needful and becoming restraint.

But among all the accomplishments of youth, there is none preferable to a decent and agreeable behaviour among men, a modest freedom of speech, a soft and elegant manner of address, a graceful and lovely deportment, a cheerful gravity and good humour, with a mind appearing ever serene under the ruffling accidents of human life: Add to this, a pleasing solemnity and reverence when the discourse turns upon any thing sacred and divine, a becoming neglect of injuries, a hatred of calumny and slander, a habit of speaking well of others, a pleasing benevolence and readiness to do good to mankind, and special compassion to the miserable; with an air and countenance, in a natural and unaffected manner, expressive of all these excellent qualifications.

Some of these, I own, are to be numbered among the duties and virtues, rather than among the ornaments of mankind: But they must be confessed to be ornaments as well as virtues. They are graces in the eye of man as well as of God. These will bespeak the affection of all that know us, and engage even an ill-natured world betimes in our favour. These will enable the youth of both sexes, who are so happy to attain them, to enter upon the stage of life with approbation and love, to pass through the world with ease, as far as ease may be expected in so degenerate and unhappy a state of things; to finish the scenes of action on earth with applause, and to leave behind them the monument of a good name, when their bodies sleep in the dust, and their souls dwell with God.

SECTION VIII.

A GUARD AGAINST EVIL INFLUENCES FROM PERSONS AND THINGS.

It belongs also to a good education, that children be guarded and secured, as far as possible, from all evil influences and unhappy impressions, which they may be exposed to receive both from persons and things. I shall sufficiently explain this direction by particular instances.

Let not nurses or servants be suffered to fill their minds with silly tales and with senseless rhymes, many of which are so absurd and ridiculous, that they will not bear to be represented in a grave discourse. The imagination of young creatures is hereby flattered and deceived: Their reason is grossly abused and imposed upon: And by this means they are trained up to be amused with follies and nonsense, rather than to exercise their understanding, which is the glory of human nature.

Let not any persons that are near them terrify their tender minds with dismal stories of witches and ghosts, of devils and evil spirits, of fairies and bugbears in the dark. This hath had a most mischievous effect on some children, and hath fixed in their constitutions such a rooted slavery and fear, that they have scarcely dared to be left alone all their lives, especially in the night. These stories have made such a deep and frightful impression on their tender fancies, that it hath enervated their souls, it hath broken their spirits early, it hath grown up with them, and mingled with their religion, it hath laid a wretched foundation for melancholy and distracting sorrows. Let these sort of informations be reserved for their firmer years, and let them not be told in their hearing, till they can better judge what truth or reality there is in them, and be made sensible how much is owing to romance and fiction.

Nor let their little hearts be frighted, at three or four years old, with shocking and bloody histories, with massacres and martyrdoms, with cuttings and burnings, with the images of horrible and barbarous murders, with racks and red hot pincers, with engines of torment and cruelty, with mangled limbs, and carcases drenched in gore. It is time enough, when their spirits are grown a little firmer, to acquaint them with these madnesses and miseries of human nature. There is no need that the history of the holy confessors and martyrs should be set before their thoughts so early in all their most ghastly shapes and colours. These things, when they are a little older, may be of excellent use to discover to them the wicked and bloody principles of persecution, both among the heathens and the papists; and to teach them the power of the grace of Christ, in supporting these poor sufferers under all the torments which they sustained for the love of God and the truth.

Let their ears be ever kept from all immodest stories, and from wanton songs: from riddles and puns with double meanings and foul intentions: let them not be suffered to read wanton jests or amorous romances; and due care should be taken to remove all books out of their way that may defile their imagination, or teach them the language or the sentiments of impurity. Nor let their eyes be entertained with lewd and unclean pictures, and images of things or actions that are not fit to be exposed. These things indeed have too often an unhappy influence to corrupt the fancy and the manners; and in riper years have been the occasion of numberless mischiefs: But especially they should be kept far away from the sight or hearing of children, lest too deep and dangerous impressions be made in those early years of life. Nothing but what is chaste, pure, and innocent, should come within the reach of their eyes and ears. Even the common necessities and actions of nature should be always expressed before them in the most modest forms of speech that our mother tongue can furnish us with. In this respect, as the poet says, children should be treated with great reverence.

Maxima debetur pueris reverentia.

It is confessed that books of anatomy and other parts of necessary science are proper to be written, and these may be consulted by persons who are grown up to a due age, especially by those whose profession requires it: There is also some necessity of foul narratives where foul crimes are committed, and ought to be publicly exposed and brought to justice and punishment. As the affairs of mankind stand,

these things cannot be always avoided: But there is no manner of necessity that children should read them, or rash unguarded youth.

For some of the reasons before-mentioned, there should be a wise conduct in shewing children what parts of the Bible they should read: For though the word of God expresseth all things with due decency, yet there are some things which have been found necessary to be spoken of in scripture, both in the laws of Moses and in the representation of the wickedness of the gentiles in the New Testament, in which adult persons have been concerned, which there is no necessity for children to read or hear, and they may be passed over or omitted among them. The Jews were wont to withhold Solomon's Song from their children till they were thirty years old: And the late pious and prudent bishop Tillotson, in a manuscript which I have seen, wishes that those parts of the Bible wherein there are some of the affairs of mankind expressed *too naturally*, as he calls it, were omitted in the public lessons of the church: I think they may as well be excepted also out of the common lessons of children, and out of the daily course of reading in family worship.

Let parents take as much care as they can in the choice of companions and playfellows for their sons and daughters. It would be a happy thing if children, who are bred up in schools, could be secured from the company and evil influences of other children, who curse and swear, who take the name of God in vain, and use filthy and unclean language. Masters and mistresses should be very watchful and strict in their enquiries into the behaviour of their scholars of both sexes when they are out of their sight, that if it were possible there might not be one among them whose lips are impure or profane; for one diseased sheep may infect the whole flock. However, where children find such immoralities practised by any of their fellows, they should be taught to shew their utmost abhorrence of it, and speedily forsake such pernicious company.

SECTION IX.

A GUARD SET ON THE SPORTS AND DIVERSIONS OF CHILDREN.

As parents should take care to have their children employed in proper learning and business, so they should not think it beneath them to concern themselves a little about their sports and recreations. Human nature, especially in younger years, cannot be constantly kept intent on work, learning, or labour. There must be some intervals of pleasure to give a loose to the mind, and to refresh the natural spirits. Too long and intense a confinement to one thing is ready to over-tire the spirits of youth, and to weaken the springs of activity by excessive fatigue. It is an old simile on this occasion, and a very just one, that a bow kept always bent will grow feeble and lose its force. The alternate successions of business and diversion preserve the body and soul of children in the happiest temper: And learning is more closely pursued, and work better done, after some agreeable relaxations. The young creatures apply themselves to their business with new vigour, after the enjoyment of some pleasurable release.

I confess, it would be a considerable advantage, if the various parts of learning and business, in which children are employed, were so happily contrived, that

one might be as it were a relaxation or diversion, when the mind is tired with the other: And if children have a taste and relish of reading and improvement of the mind, there is a rich variety of entertainment to be found in books of poetry, history, accounts of the wonders of art and nature, as well as ingenious practices in mechanical and mathematical affairs. It is happiest, indeed, where this relish is the gift of nature; yet children may be trained up by wise and alluring methods, to delight in knowledge, and to choose such sort of recreations, especially in winter nights and rainy seasons, when they cannot enjoy the more active diversions abroad. Yet, besides these, some other sorts of sports will generally be found necessary for children of almost all dispositions.

And their sports ought to be such as are in some measure chosen by themselves, that they may be matter of delight, yet still under the regulation of the eye and prudence of a parent. No sort of play should be permitted, wherein sacred things become a matter of jest or merriment. No sport should be indulged wherein foul language, ill names, or scandal are practised; wherein there is any violation of modesty, or of the rules of decency and cleanliness; nothing must be suffered where thereis any breach of the moral precepts of the law of God; wherein cozening or cheating, falsehood or lying, are practised or allowed. They should be confined to honesty, justice, truth, and goodness, even in their very play.

They should not be permitted to use such sporting as may tend to discompose their spirits, disorder their nature, injure their flesh, prejudice their health, break their limbs, or do mischief to themselves or each other. This should rather be the play of dogs or horses than of children.

Nor should they ever be allowed to practise those diversions that carry an idea of barbarity and cruelty in them, though it be but to brute creatures. They should not set up cocks to be banged with cudgels thrown at them about Shrovetide; nor delight in giving a tedious lingering death to a young litter of dogs or cats, that may be appointed to be destroyed and drowned, lest they multiply too much in a house: Nor should they take pleasure in pricking, cutting, or mangling young birds which they have caught, nor using any savage and bloody practices towards any creatures whatsoever; lest their hearts grow hard and unrelenting, and they learn in time to practise these cruelties on their own kind, and to murder and torture their fellow-mortals; or at least to be indifferent to their pain and distress, so as to occasion it without remorse.

They should never be suffered to game for money, nor even for their own toys or playthings, if they are costly and expensive: Many sore inconveniences, in riper years, arise from such indulgences. And indeed no recreations should be accounted lawful, but those in which they can with courage recommend themselves to God, and desire his blessing upon them.

Those children who are kept pretty close to learning in a school, should be directed to pursue their recreations as much as may be in the open air; and to exercise their limbs with vigour and activity, that their growth and health may not be impaired by study, and too much confinement to a book. But in very foul weather, or in long winter evenings, as I hinted before, they may be taught to seek such diversions as may at once refresh and improve their minds.

For want of this, in some families, the games of draughts and chess are practised, and some other little sports upon a chess-board, without any stakes or aim at gain beyond

the mere pleasure of victory. In other houses, cards and dice are introduced, for want of better recreations. The former of these, namely, draughts and chess, are innocent enough, and may wear off a heavy hour, when the mind or body are unfit for business: The latter have had the general censure of our wise and pious fathers, and there have been most unhappy effects attending them: And, indeed, these games are seldom used without depositing too much money as the stake; and this tends to engage the passions with greater vehemence than the nature of a recreation can require, or should admit. But I leave it to those who are more skilful in casuistic divinity to prove them absolutely unlawful in the very nature of the game.

However that be, I have often earnestly wished, that, instead of all these games, there were some more profitable sports invented for a long evening, for a dull hour, or a rainy season: And I am well assured, that if some ingenious mind, which is well skilled in mathematical learning and in games, would but take pains to contrive some such diversions, there might be a much better account given of the hours of leisure and remission of business, by persons of both sexes, and of all ages, than can be at present, for want of such useful and improving recreations.

What if cards and dice should be proved to be never so lawful in themselves, yet there might be various inventions, of much more advantage to knowledge and virtue, placed in the room of them. May not some little tablets of pasteboard be made, in imitation of cards, which might teach the unlearned several parts of grammar, philosophy, geometry, geography, astronomy, &c.

What if on one side of these tablets or charts a town or city were named and described, and on the other side the county, province, and kingdom where that town stands, with some geographical or historical remark on it; and whosoever in play draws the chart with the town on it, shall be obliged to tell the county where it stands, and the remark made on it?

What if on one side were a geometrical figure, and on the other the demonstration of some property belonging to it?

What if one side bore the name or figure of any piece of money; and the other all the multiples of it by the nine digits, or as far as twelve? This would be useful for children bred up to a trade.

What if the figure of some plant, animal, engine, or any thing else in the world of nature or art, were printed on one side; and on the other, the name of the thing, which should be required to be spelled right by young scholars when they see the figure, in order to teach them the art of spelling. And if to this were added some beautiful expression or description of the thing, taken out of our best English poets, to be repeated by him who draws the chart which has the figure on it?

Or if on one side were a word in English, and on the other the same thing expressed in Latin, Greek, or French, for such who learn those languages?

Or if single names of famous men and women were on one side; and the reverse contained the history, or some short account, of those persons whose names are so famous?

What if in a sheet of paper, or a twopenny book, were written a hundred proverbs or wise sayings, collected out of moralists, ancient and modern, relating to all the virtues and vices; and a collection of the most eminent examples of these vices and virtues were superadded: And if one or more solid bodies of wood, of sixteen, twenty, or thirty-two

flat sides were formed with the name of one virtue or vice inscribed on each side; and by the rolling of this many-sided toy, the uppermost word or name should be an indication what proverb, or what example to require?

There have been, I confess, several sorts of cards invented with proverbs, with various learned figures and mathematical devices upon them; but, as far as I can learn, these have been but mere pictures and ornaments to the hearts and diamonds; these learned devices and figures have no share in the game; the cards are used like common cards still, without any manner of improvement of any of the gamesters in these sciences. But what I propose is a contrivance to render these words, or figures, or sentences, the very implements or engines of the sport itself, without so much as the form of any spade, or club, or heart, or diamond, drawn upon the chart or tablet.

Some of these exercises and diversions, if happily contrived, may not only be fit to entertain children in their younger years, but may usefully amuse them when they are grown up toward manly age.

For my part, I own myself to be so much unskilled in the various games used among us, that I am not fit to contrive, nor capable of inventing such useful pastime. But I wish some of the sons of ingenuity had science and virtue so much at heart, as to attempt such a service to mankind. And parents should seek some sort of delightful employments or recreations for the leisure hours of their sons and their daughters, when they are in the stage of youth, that they may be more easily withheld from those diversions of the present age, which are so fashionable and yet so dangerous.

Among these dangerous and modish diversions, I cannot forbear to mention midnight assemblies, play-houses, gaming-tables, and masquerades. Let parents who would willingly see their children walking in the paths of piety and virtue, endeavour to guard their inclinations from these enticing amusements. The religion and conscience of many a well-inclined youth have been exposed to great and imminent danger among those scenes of vanity and folly, to say no worse. My business is not to rail at them, though some of my readers will hardly forgive me that I deal with them so tenderly, and give them names of so soft a sound. But this must be confessed, that if persons of piety frequent them, they too much risk their character and their innocence, and expose their virtue and their piety to great and needless temptations; or, at least, by giving the sanction of their presence at such places, and on such occasions, may make themselves accessary to the ruin of those who may be less fortified against their insnaring tendency.

Yet some of these diversions and amusements are so charming to many a young thoughtless creature, that no risk is thought too great to run, if they may but please their ears and their eyes, and gratify their idle and vain inclinations. Hence these houses of pleasure are filled and frequented: Hence the theatres are crowded, and gaming-rooms attended by multitudes of youth, whose parents have enjoyed the blessing of a stricter education; and though their estate can scarcely support the irregular expense, yet they gratify their children in these hazardous recreations, and take no pains to cure them of this pernicious folly.

But the children of our age will pertly reply, "What, must we live like nobody? Must we turn old puritans again? Must we look like fools in company, where there is scarcely any discourse but of plays, operas, and masquerades, of cards, dice, and midnight assemblies? And pray what sin is there in any of them?"

To this I answer, that I am very sorry to find that the children of religious parents choose and delight in company where these things are the chief subject of conversation. I fear, lest God, and virtue, and the important things of another world, are utterly banished out of such a visiting-room, where these discourses are the chief entertainment, and there is little place found for any profitable conversation, even about the most useful and valuable affairs of this life.

But, light as these pert questions are, I will consider them one after another. You say first, Must we look like old puritans? Must we live like nobody? No, my friends, I am not persuading you to return to the habit and guise of your ancestors, nor to transact your visits, nor to model your diversions by the pattern of fourscore years ago. There is a certain fashion and appearance of things, that belongs to every age: Modes of conversation and forms of behaviour are ever changing in this life; and it is no improper thing for persons, according to their rank and figure in life, to conform themselves to the present customs, as far as they are innocent and have no evil influence upon morality or religion. But where any unhappy customs prevail in the world, that make an inroad upon your piety, that endanger your virtue, that break the good order of religious families, and are usually or always attended with some mischievous consequences, surely in these instances it is better to look like a puritan, and stand almost alone, than to follow the multitude in the road that leads to iniquity and mischief. A puritan, or a separatist from the vain or dangerous courses of a wicked world, is to this day a name of lasting glory; though the enemies of God and of your ancestors may cast it upon them in a way of reproach. There are some things in which you must dare to be singular, if you would be Christians, and especially in a corrupt and degenerate age. A sense of the love of God secured to your hearts, and an inward peace of conscience, will infinitely countervail the enmity of the world, and overbalance the reproaches of an ungodly generation.

Besides, if the families that profess religion, and desire to preserve piety amongst them, and to transmit it down to their children's children, would but heartily join together in a resolved abstinence from these hazardous diversions, there would be no need of any one of you to stand alone, and your appearance on the side of virtue would not be singular. You might animate and support one another with public courage, and, having God and virtue on your side, you might in some measure bear down the effrontery and ridicule of an age of vice and sensuality; an age wherein comedies and masquerades, gaming-tables and midnight-assemblies are become the modish diversions.

But still it may be said, What sin is there in any of them? Bear with me, then, while I take them in order one after another, and briefly give my opinion concerning each of them.

1. Let us begin with the playhouse. It is granted, that a dramatic representation of the affairs of human life is by no means sinful in itself: I am inclined to think, that valuable compositions might be made of this kind, such as might entertain a virtuous audience with innocent delight, and even with some real profit. Such have been written in French, and have, in times past, been acted with applause. But it is too well known, that the comedies which appear on our stage, and most of the tragedies too, have no design to set religion or virtue in its best light, nor to render vice odious to the spectators. In many of them piety makes a ridiculous figure, and virtue is dressed in the habit of folly; the sacred name of God is frequently taken in vain, if not blasphemed;

and the man of flagrant vice is the fine gentleman, and the poet's favourite, who must be rewarded at the end of the play.

Besides, there is nothing will pass on our theatres that has not the mixture of some amorous intrigue: Lewdness itself reigns and riots in some of their scenes: Sobriety is put quite out of countenance, and modesty is in certain danger there: The youth of serious religion, that ventures sometimes into this infected air, finds his antidotes too weak to resist the contagion. The pleasures of the closet and devout retirement are suspended first, and then utterly vanquished by the overpowering influence of the last comedy: The fancy is all over defiled, the vain images rise uppermost in the soul, and pollute the feeble attempts of devotion; till, by degrees, secret religion is lost and forgotten: And in a little time the playhouse has got so much the mastery of conscience, that the young Christian goes to bed after the evening drama with as much satisfaction and ease, as he used to do after evening prayer.

If there have been found two or three plays which have been tolerably free from lewd and profane mixtures, there are some scores or hundreds that have many hateful passages in them, for which no excuse can be made. And when all the charming powers of poesy and music are joined with the gayest scenes and entertainments, to assault the senses and the soul at once, and to drive out virtue from the possession of the heart, it is to be feared that it will not long keep its place and power there. What a prophet of their own says of the court, may with much more truth and justice be said of the theatre:

> " It is a golden, but a fatal circle,
> Upon whose magic skirts a thousand devils
> In crystal forms, sit tempting innocence,
> And beckon early virtue from its centre."

Another of the poets of the town, who made no great pretences to virtue, and who well knew the qualities of the theatre, and its mischievous influence, writes thus of it:

> " It would be endless to trace all the vice
> That from the playhouse takes immediate rise.
> It is the unexhausted magazine
> That stocks the land with vanity and sin.
> ————By flourishing so long,
> Numbers have been undone, both old and young:
> And many hundred souls are now unblest,
> Which else had dy'd in peace, and found eternal rest.

As for any of my friends who are not yet convinced of the justice of these censures, I entreat them to read what Mr. Collier, Mr. Bedford, and Mr. Law, have written on this subject: And though I would by no means justify and support every remark they have made, yet I think every reader, who has a modest and pious soul, and has the cause of God and virtue near his heart, will be a little afraid to give his presence there, lest he should seem to encourage such incentives to iniquity and profaneness: Or, if he should go thither once, merely to see and know what it is, I will persuade myself he will not make it his practice, or frequent that house of infection.

But you will say, " There is some advantage to be gained by these entertainments:

There is a deal of fine language in them, and fashionable airs of conversation: There are many of the fooleries of life exposed in the theatre, which suit not a more solemn place; and comedies will teach us to know the world, and to avoid the ridicule of the age."

But let my younger friends, who are so willing to improve in their knowledge of the world and politeness, remember, that, whatsoever may be gotten, there is much more to be lost among these perilous and enticing scenes of vanity: The risk of their virtue and serious religion can never be recompensed by the learning a few fine speeches and modish airs, or the correction of some awkward and unfashionable piece of behaviour. This is to plunge headlong into the sea, that I may wash off a little dirt from my coat, or to venture on poison in order to cure a pimple.

Besides, most or all of these ends might be attained by reading some few of the best of them in private: Though, I confess, I am cautious how I recommend this practice, because I think that almost all these dramatic composures in our age, have some dangerous mixtures in them. Those volumes of short essays which are intitled *The Spectator*, will give a sufficient knowledge of the ways of the world, and cure us of a hundred little follies, without the danger that there is in reading of plays: Though even in those very volumes, I could heartily wish that here and there a leaf were left out, wherein the writers speak too favourably of the stage, and now and then, though rarely, introduce a sentence that would raise a blush in the face of strict virtue.

2. The next forbidden diversion is the masquerade. By all the descriptions that I have heard of it, it seems to be a low piece of foolery, fitted for children and for persons of a little and trifling genius, who can entertain themselves at blindman's-buff. And as the entertainment is much meaner than that of the theatre, so it is something more hazardous to virtue and innocence. It does not so much as pretend to any such improvement of the mind as the theatre professes; while it lays a more dreadful snare to modesty, and has made too often a dismal inroad on the morals of those that frequent it. Could I but persuade persons to read what the Right Reverend the late Lord Bishop of London has published, in his sermon for the reformation of manners, I am ready to think, that all those who profess virtue, would *refrain their feet far from it, and not come near the doors of the house*. His words are these:

"Amongst the various engines contrived by a corrupt generation to support vice and profaneness, and keep them in countenance, I must particularly take notice of masquerades, as they deprive virtue and religion of their last refuge, I mean shame, which keeps multitudes of sinners within the bounds of decency, after they have broken through all the ties of principle and conscience. But this invention sets them free from that tie also; being neither better nor worse than an opportunity to say and do there, what virtue, decency, and good manners will not permit to be said or done in any other place. If persons of either sex will frequent lewd and profane plays, or openly join themselves to loose and atheistical assemblies of any kind, they have their reward; they are sure to be marked and branded by all good men, as persons of corrupt minds and vicious inclinations, who have abandoned religion and all pretences to it, and given themselves over to luxury and profaneness. And, as bad as the world is, this is a very heavy load upon the characters of men, and, in spite of all the endeavours of vice to bear up and keep itself in countenance, it sinks them by degrees into infamy and contempt. But this pernicious invention entrenches vice and profaneness against all the assaults and impressions of shame: And whatever lewdness may be concerted, whatever luxury, immodesty, or

extravagance may be committed in word or deed, no one's reputation is at stake, no one's character is responsible for it. A circumstance of such terrible consequence to virtue and good manners, that if masquerades shall ever be revived, as we heartily hope they will not, all serious Christians within these two great and populous cities will be nearly concerned to lay it to heart, and diligently bestir themselves in cautioning their friends and neighbours against such fatal snares. Particularly, all who have the government and education of youth, ought to take the greatest care to keep them out of the way of this dangerous temptation, and then to labour against the spreading of it.

"I cannot forbear to add, that, all religious considerations apart, this is a diversion that no true Englishman ought to be fond of, when he remembers that it was brought in among us by the ambassador of a neighbouring nation, in the last reign, while his master was in measures to enslave us: And, indeed, there is not a more effectual way to enslave a people, than first to dispirit and enfeeble them by licentiousness and effeminacy." Thus far the right reverend author, whose zeal for the suppression of all these tempting machineries has been so conspicuous and honourable.

3. The third place of dangerous resort is the gaming-table. Many young gentlemen have been there bubbled and cheated of large sums of money, which were given them by their parents to support them honourably in their stations. In such sort of shops, young ladies are tempted to squander away too large a share of their yearly allowance, if not of the provision which their parents have made for their whole lives. It is a fatal snare to both sexes: If they win they are allured still onward, while, according to their language, luck runs on their side; if they lose, they are tempted to another and another cast of the die, and enticed on still to fresh games by a delusive hope, that fortune will turn, and they shall recover all that they have lost. In the midst of these scenes, their passions rise shamefully, a greedy desire of gain makes them warm and eager, and new losses plunge them sometimes into vexation and fury till the soul is quite beaten off from its guard, and virtue and reason have no manner of command over them.

My worthy friend Mr. Neal, in his reformation-sermon, has taken occasion not only to inform us that "merchants and tradesmen mix themselves at these tables with men of desperate fortunes, and throw the dice for their estates:" But in a very decent and soft manner of address he has enquired, "whether public gaming in virtuous ladies is not a little out of character? Whether it does not draw them into mixed company, and give them an air of boldness, which is perfectly inconsistent with that modesty which is the ornament of the fair sex? Whether it does not engage them in an habit of idleness, and of keeping ill hours? Whether their passions are not sometimes disordered? And whether the losses they sustain have not a tendency to breed ill blood in their families and between their nearest relations? It has been often observed, that gaming in a lady has usually been attended with the loss of reputation, and sometimes of that which is still more valuable, her virtue and honour." Thus far proceeds this useful sermon.

Now if these be the dismal and frequent consequences of the gaming-table, the loss of a little money is one of the least injuries you sustain by it. But what if you should still come off gainers? Is this the way that God has taught or allowed us to procure the necessary comforts of life? Is this a sort of labour or traffic on which you can ask the blessing of heaven? Can you lift up your face to God, and pray that he would

succeed the cast of the die, the drawing of the lot, or the dealing out of the cards, so as to increase your gain, while it is the very sense and language of the prayer, that your neighbour may sustain so much loss? This is a sad and guilty circumstance which belongs to gaming, that one can gain nothing but what another loses; and consequently we cannot ask a blessing upon ourselves, but at the same time we pray for a blast upon our neighbour.

Will you hope to excuse it by saying, that my neighbour consents to this blast, or this loss, by entering into the game, and there is no injury where there is consent?

I answer, that though he consents to lose conditionally, and upon a venturous hope of gain, yet he is not willing to sustain the loss absolutely; but when either chance, or his neighbour's skill in the game has determined against him, then he is constrained to lose, and does it unwillingly; so that he still sustains it as a loss, or misfortune, or evil. Now if you ask a blessing from heaven on this way of your getting money, you ask rather absolutely that your neighbour may sustain a loss, without any regard to the condition of his hope of gain. Your wish and prayer is directly that you may get, and he may lose: You cannot wish this good to yourself, but you wish the contrary evil to him: And therefore, I think, gaming for gain cannot be consistent with the laws of Christ, which certainly forbid us to wish evil to our neighbour.

And if you cannot, so much as in thought, ask God's blessing on this, as you certainly may on such recreations as have an evident tendency innocently to exercise the body and relax the mind, it seems your conscience secretly condemns it, and there is an additional proof of its being evil to you.

All the justest writers of morality, and the best casuists, have generally, if not universally, determined against these methods of gain. Whatsoever game may be indulged as lawful, it is still a recreation, and not as a calling or business of life: And therefore no larger sums ought to be risked or ventured in this manner, than what may be lawfully laid out by any persons for their present recreation, according to their different circumstances in the world.

Besides all this, think of the loss of time, and the waste of life that is continually made by some who frequent these gaming-places. Think how it calls away many a youth from their proper business, and tempts them to throw away what is not their own, and to risk the substance, as well as the displeasure of their parents, or of their master, at all the uncertain hazards of a dice-box. Read the pages which Mr. Neal has employed on this theme, in the sermon just now cited: Read what Mr. Dorrington has written several years ago on this subject of gaming: I wish such discourses were fresh in print, and put into the hands of every one who lies under this temptation.

4. The midnight assemblies are the last which I shall mention of those modish and hazardous diversions, wherein youth are drawn away to much vanity, and plunged into the sensual gaieties of life; and that at those hours, part of which should be devoted to the religion of the family, or the closet, and part to the nightly repose of nature. It is acknowledged to be proper and needful, that young people should be indulged in some recreations, agreeable to their age, and suitable to the condition in which providence has placed them. But I would ask whether the great and only valuable end of recreation is to be expected from these midnight assemblies, namely, to relieve us from the fatigues of life, and to exhilarate the spirits, so as thereby to fit us for the duties of life and religion? Now are these the proper means to fit us for the duties of either kind?

Perhaps it will be said, that dancing, which is practised in those assemblies, is an exercise conducive to health, and therefore a means of fitting us for the duties of life. But may not the unseasonableness of the midnight-hour prevent and over-balance the benefit that might otherwise be supposed to arise from the exercise? Is it likely that natural health should be promoted, or preserved, by changing the seasons and order of nature, and by allotting those hours to exercise, which God and nature have ordained to rest? Is the returning home after five or six hours dancing, through the cold and damp of the midnight air, a proper means of preserving health? Or, rather, is it not more likely to impair and destroy it? Have not the fatal effects been too often felt? Have there not been sacrifices of human life offered to this midnight idol? Have there been no fair young martyrs to this unseasonable folly? Are there not some of its slaves who are become feeble, labouring under sore diseases, and some of them fallen asleep in death? Have not their music and their dancing, instead of natural rest in their beds, brought them down to a long silence in the grave, and an untimely rest in a bed of dust? Those amiable pieces of human nature, who were lately the joy and hope of their too indulgent parents, are now the bitterness of their hearts; and those very exercises from whence they hoped the continuance of their joy, as the supposed means of confirming their children's health, are become an everlasting spring of their mourning.

And as those midnight recreations are badly suited to fit us for the duties of the civil life, so they are worse suited to fit us for, or rather they are more apparently opposite to the duties of religion. The religion of the closet is neglected, the beautiful regularity and order of the family is broken; and when the night has been turned into day, a good part of the next day is turned into night, while the duties of the morning both to God and man, are unperformed. Those who have frequented these assemblies know all this, and are my witnesses to the truth of it. Nay, the very practice itself, at those unseasonable hours, tells all the world how much they prefer these dangerous amusements to the worship of God in the evening, and in the morning, and to all the conveniences and decorum of family-government. Besides, if I speak to Christians, have you not found that the indulgence to this sort of diversions, which are usually practised in those unseasonable assemblies, leads the mind away insensibly from God and religion, gives a vanity to the spirit, and greatly abates the spiritual and heavenly temper which should belong to Christians? Hath it not taken away the savour ofgodliness and tincture of piety from some younger minds? And do elder Christians never suffer by it? Let it be further considered, what sort of company you mingle with in those midnight-assemblies. Are they most frequented by the wise and pious, or by the more vain and vicious part of mankind? Do they tend to fill your mind with the most improving notions, and your ears and your lips with the most proper conversation? Do you that frequent them never find your piety in danger there? Does strict religion and prayer relish so well with you after those gaudy nights of mirth and folly? And do you then, when you join in those assemblies, practise the commands of God, to *abstain from all appearance of evil*, and to *shun the paths of temptation?* Can you pray for a blessing on your attendance on these midnight-meetings? Or can you hope to run into the midst of those sparks and living coals, and yet not be burned, nor so much as have your garments singed? Are not parents very generally sensible, that there are dangerous snares to youth in those gay diversions? And therefore the mother will herself go along with her young offspring, to take care of them, and to watch over them;

and perhaps there is scarcely any place or time which more wants the watchful eye of a superior. But here let me ask, is this all the reason why the mother attends those scenes of vanity? Has she no relish for them herself? Has she no gay humours of her own to be gratified, which she disguises and covers with the pretence of a parental solicitude for the virtue and honour of her offspring? Are there no mothers who freely lead their children into those perilous places, where soul and body are in danger, and are really their tempters, under a colour of being their guardians?

You will plead, perhaps, that some of these things are proper for the improvement of young people in good-breeding and politeness. They must be brought into company, to see the world, and to learn how to behave with becoming decency. Well, suppose these assemblies to be academies of politeness, and that young people attend there upon lectures of good-breeding: Is there no other time so fit as midnight to polish the youth of both sexes, and to breed them well? May not an hour or two be appointed, at more proper seasons, by select companies, for mutual conversation and innocent delight? Can there be no genteel recreations enjoyed, no lessons of behaviour taught by day-light? Can no method of improvement in good-breeding be contrived and appointed, which shall be more secure from temptations and inconveniences? Are there none which are more harmless, more innocent, of better reputation among persons of strict piety, and which make less inroad on the duties of life, both solitary and social, civil and religious.

Shall I enquire once more, what is done at many of those midnight assemblies, before the dance is begun, or when it is ended, and what is the entertainment of those who are not engaged in dancing? Are they not active in gaming? Are not cards the business of the hour? Are not children educated, by this means, in the love of gaming? And do they not hereby get such a relish of it, as proves afterwards pernicious to them? Now if gaming be not a practice fit to be encouraged, what encouragement do those assemblies deserve, where gaming is one of the chief diversions or business?

But it is time to put an end to this sort of discourse. I beg pardon of my readers for having drawn it out to so great a length: For I have said too much on this subject, for those who have no inclination to these criminal and dangerous diversions: And I wish I may have said enough to do good to those who have.

Upon the whole, I conclude, it is the duty of parents who would give their children a good education, to see to it that children, in their younger years, do not indulge such recreations as may spoil all the good effects of the pious instructions, the prayers, and care of their parents. Otherwise, if you encourage them in such recreations, you are building up those vanities of mind, and those vicious inclinations with one hand, which you labour to prevent or to destroy with the other.

SECTION X.

OF THE PROPER DEGREES OF LIBERTY AND RESTRAINT IN THE EDUCATION OF A SON, ILLUSTRATED BY EXAMPLE.

So weak and unhappy is human nature, that it is ever ready to run into extremes; and when we would recover ourselves from an excess on the right hand, we know not where to stop till we are got to an excess on the left. Instances of this kind are innu-

merable in all the affairs of human life; but it is hardly more remarkable in any thing than in the strict and severe education of our fathers a century ago, and in the most profuse and unlimited liberty that is indulged to children in our age.

In those days, the sons were bred up to learning by terrible discipline: Every Greek and Latin author they conversed with was attended with one or many new scourges, to drive them into acquaintance with him; and not the least misdemeanor in life could escape the lash: As though the father would prove his daily *love to his son* by never *sparing his rod;* Prov. xiii. 24. Now-a-days young master must be treated with a foolish fondness, till he is grown to the size of man; and let his faults be never so heinous, and his obstinacy never so great, yet the preceptor must not let him hear the name of the rod, lest the child should be frighted or hurt; the advice of the wisest of men is utterly forgotten, when he tells us, that due *correction shall drive out the folly that is bound up in the heart of a child;* Prov. xxii. 15. Or else they boldly reverse his divine counsel, *Prov.* xiii. 24. as though they would make the rule of their practice a direct contradiction to the words of Solomon, namely, *He that spareth the rod* loveth *his son, but he that* hateth *him chastens him betimes.*

In that day, many children were kept in a most servile subjection, and not suffered to sit down, or to speak, in the presence of their father, till they were come to the age of one-and-twenty. The least degree of freedom was esteemed a bold presumption, and incurred a sharp reproof. Now they are made familiar companions to their parents, almost from the very nursery; and therefore they will hardly bear a check or reproof at their hand.

In the beginning of the last century, and so onward to the middle of it, the children were usually obliged to believe what their parents and their masters taught them, whether they were principles of science, or articles of faith and practice: They were tied down almost to every punctilio, as though it were necessary to salvation; they were not suffered to examine or enquire whether their teachers were in the right, and scarcely knew upon what grounds they were to assent to the things that were taught them; for it was a maxim of all teachers, that the learner must believe, *Discentem oportet credere.* Then an *ipse dixit*, or Aristotle said so, was a sufficient proof of any proposition in the colleges; and for a man of five-and-twenty to be a Christian and a Protestant, a dissenter or a churchman, it was almost reason enough to say, that his father was so. But in this century, when the doctrine of a just and reasonable liberty is better known, too many of the present youth break all the bonds of nature and duty, and run to the wildest degrees of looseness, both in belief and practice. They slight the religion which their parents have taught them, that they may appear to have chosen a religion for themselves: And when they have made a creed or belief of their own, or rather borrowed some scraps of infidelity from their vain companions and equals, they find pretences enough to cast off all other creeds at once, as well as the counsels and customs of their religious predecessors.

"The practices of our fathers," say they, "were precise and foolish, and shall be no rule for our conduct; the articles of their faith were absurd and mysterious, but we will believe nothing of mystery, lest our faith should be as ridiculous as theirs." In their younger years, and before their reason is half grown, they pretend to examine the sublimest doctrines of Christianity; and a raw and half witted boy shall commence

an infidel, because he cannot comprehend some of the glorious truths of the gospel; and laughs at his elders and his ancestors, for believing what they could not comprehend.

The child now-a-days forgets that his parent is obliged, by all the laws of God and nature, to train him up in his own religion, till he is come to the proper age of discretion to judge for himself; he forgets, or he will not know, that the parent is intrusted with the care of the souls of his young offspring by the very laws of nature, as well as by the revealed covenants of innocency and of grace. The son now-a-days forgets the obligations he is under to honour and obey the persons that gave him birth; he pays no regard to the doctrines which led his ancestors to the love of God and man; whereas doctrines that have such influence, claim at least some degrees of attention, and especially from a son who has been trained up in them, and beheld the effect of them in the piety of his parents; nor will the very light of nature suffer him to depart from them, but upon the clearest judgment of his own mature reason, a thorough and impartial search into the subject, the loud inward dictates of his conscience, and the full evidence of his parents' mistake.

So wanton and licentious a spirit has possessed some of the youth of the nation, that they never think they have freed themselves from the prejudices of their education, till they have thrown off almost all the yokes of restraint that are laid upon them by God or man. Some take a petulant pride in laying aside the holy Scriptures, for the same reason that Timothy was advised to continue in them; and that is, because they have learned and known them from their very childhood; 2 *Tim.* iii. 15. And some, perhaps, have been laughed out of their Christianity, lest it should be said, their mothers and their nurses had made them Christians.

Heretofore the sons were scarcely suffered to be absent from home an hour, without express leave, till they were arrived at the age of man, nor daughters till they were married; now both sexes take an unbounded licence of roving where they please, and from a dozen years old, they forget to ask leave to wander or to visit where their fancies lead them: At first the parent gives a loose and winks at it, and then the child claims it as his due for ever.

In short, the last age taught mankind to believe that they were mere children, and treated them as such, till they were near thirty years old; but the present gives them leave to fancy themselves complete men and women at twelve or fifteen; and they accordingly judge and manage for themselves entirely, and too often despise all advice of their elders.

Now, though it be sufficiently evident that both these are extremes of liberty or restraint, yet if we judge by the reason of things, or by experience and success, surely the ancient education is to be preferred before the present, and of the two should rather be chosen.

If we would determine this by reason, it is easy to see that a father of fifty or sixty years old, is fitter to judge for his son at four-and-twenty, in many matters of importance, than a boy of fifteen is to judge for himself.

Or, if we would decide the matter by experience, it is plain enough that the posterity of the former generation, who are the fathers and the grandfathers of the present, had more of serious religion and true virtue amongst them, than there is any hope or prospect of among the greatest part of their children and grand-children. And if I would use a bold metaphor, I might venture to say with truth, the last century has brought

forth more solid fruits of goodness, than the present can yet show in blossoms; and, in my opinion, this is much owing to the neglect of the pruning-knife.

But after all, is there no medium between these two extremes, excess of confinement, and excess of liberty? May not young understandings be allowed to shoot and spread themselves a little, without growing rank and rampant? May not children be kept in a due and gentle subjection to their parents, without putting yokes of bondage on them? Is there no reasonable restraint of the wild opinions and violent inclinations of youth, without making chains for the understanding, and throwing fetters on the soul? May not the young gentleman begin to act like a man, without forgetting that he is a son; and maintain the full liberty of his own judgment without insolence and contempt of the opinions of his elders? May not he who is bred up a Protestant and a Christian, judge freely for himself, without the prejudices of his education, and yet continue a Christian and a Protestant still? Is it not possible for the parent to indulge, and the child to enjoy, a just liberty, and yet neither encourage nor practise a wild licentiousness?

Yes, surely; and there have been happy instances in the last age, and there are some in this, both of parents and children, that have learned to tread this middle path, and found wisdom and virtue in it, piety and peace. *Agathus* has bred his son up under such discipline, as renders them both proper examples to the world.

Eugenio is just out of his minority, and in the twenty-second year of his age he practises the man with all that virtue and decency, which makes his father's acquaintance covet his company; and indeed they may learn by his discourse the art of good reasoning, as well as the precepts of piety from his example. He is an entertaining companion to the young gentlemen his equals; and yet divines and philosophers take a pleasure to have *Eugenio* amongst them. He is caressed by his superiors in honour and years; and though he is released from the discipline of parental education, yet he treats the lady his mother with all that affectionate duty that could be desired or demanded of him ten years ago: His father is content to see his own youth outshined by his son, and confesses that *Eugenio* already promises greater things than *Agathus* did at thirty.

If you ask whence these happy qualities arise, I grant there was some foundation for them in the very make of his nature; there was something of a complexional virtue mingled with his frame; but it is much more owing to the wise conduct of his parents from his very infancy, and the blessing of divine grace attending their labours, their prayers and their hopes.

He was trained up from the very cradle to all the duties of infant virtue, by the allurements of love and reward, suited to his age; and never was driven to practise any thing by a frown or a hasty word, where it was possible for kinder affections to work the same effect by indulgence and delay.

As fast as his reasoning powers began to appear and exert themselves, they were conducted in an easy track of thought, to find out and observe the reasonableness of every part of his duty, and the lovely character of a child obedient to reason and to his parents' will; while every departure from duty was shewn to be so contrary to reason, as laid an early foundation for conscience to work upon: Conscience began here to assume its office, and to manifest its authority in dictates, and reproofs, and reflections of mind, peaceful or painful, according to his behaviour. When his

parents observed this inward monitor to awake in his soul, they could better trust him out of their sight.

When he became capable of conceiving of an almighty and invisible being, who made this world and every creature in it, he was taught to pay all due regard to this God his maker; and from the authority and love of his father on earth, he was led to form right ideas, as far as childhood permitted, of the power, government, and goodness of the universal and supreme Father of all in heaven.

He was informed why punishment was due to an offence against God or his parents, that his fear might become an useful passion to awaken and guard his virtue; but he was instructed, at the same time, that where he heartily repented of a fault, and returned to his duty with new diligence, there was forgiveness to be obtained both of God and man.

When at any time a friend interceded for him to his father, after he had been guilty of a fault, he was hereby directed into the doctrine of Jesus the Mediator between God and man; and thus he knew him as an intercessor, before he could well understand the notion of his sacrifice and atonement.

In his younger years he passed but twice under the correction of the rod; once for a fit of obstinacy and persisting in a falsehood; then he was given up to severe chastisement, and it dispelled and cured the sulled humour for ever; and once for the contempt of his mother's authority he endured the scourge again, and he wanted it no more.

He was enticed sometimes to the love of letters, by making his lesson a reward of some domestic duty; and a permission to pursue some parts of learning was the appointed recompence of his diligence and improvement in others.

There was nothing required of his memory but what was first, as far as possible, let into his understanding: And by proper images and representations, suited to his years, he was taught to form some conception of the things described, before he was bid to learn the words by heart. Thus he was freed from the danger of treasuring up the cant and jargon of mere names, instead of the riches of solid knowledge.

Where any abstruse and difficult notions occurred in his course of learning, his preceptor postponed them till he had gone through that subject in a more superficial way; for this purpose he passed twice through all the sciences; and to make the doctrines of Christianity easy to him in his childhood, he had two or three catechisms composed by his tutor, each of them suited to his more early or more improved capacity, till at twelve years old he was thought fit to learn that public form, which is more universally taught and approved.

As he was inured to reasoning from his childhood, so he was instructed to prove every thing, according to the nature of the subject, by natural or moral arguments, as far as his years would admit: And thus he drew much of his early knowledge from reason, or from revelation, by the force of his judgment, and not merely from his teachers by the strength of his memory.

His parents were persuaded indeed that they ought to teach him the principles of virtue while he was a child; and the most important truths of religion, both natural and revealed, before he was capable of deriving them from the fund of his own reason; or of framing a religion for himself out of so large a book as the Bible. They thought themselves under the obligation of that divine command, *Train up a child in the way*

that he should go, and when he is old he will not depart from it; Prov. xxii. 6. And therefore, *from a child, they made him acquainted with the holy Scriptures*, and persuaded him to believe that they were *given by the inspiration of God*, before it was possible for him to take in the arguments from reason, history, tradition, &c. which must be joined together to confirm the sacred canon, and prove the several books of the Bible to be divine. Thus, like Timothy, he *continued in the things which he had learned, and had been assured of, knowing of whom he had learned them;* 2 Tim. iii. 14, 15, 16. Yet as his years advanced, they thought it requisite to shew him the solid and rational foundations of his faith, that his hope might be built upon the authority of God, and not of men.

Thus the apostles and prophets were made his early companions: And being instructed in the proofs of the Christian religion, and the divine original of his Bible, he pays a more constant and sacred regard to it, since his judgment and reason assure him that it is the word of God, than when he was a child, and believed it because his mother told him so. He reads the Scriptures daily now, not like the lessons of his infancy, but as the infallible rule of his faith and practice: He searches them every day in his closet, not to confirm any articles or doctrines that he is resolved to believe, but, as the noble Bereans did, to examine and try whether those doctrines and articles ought to be believed or no, which he was taught in the nursery.

After he arrived at fifteen he was suffered to admit nothing into his full assent, till his mind saw the rational evidence of the proposition itself; or at least till he felt the power of those reasons, which obliged him to assent upon moral evidence and testimony, where the evidences of sense or of reason were not to be expected. He knew that he was not to hope for mathematical proof that there is a Pope at Rome, that the Turks have dominion over Judea, that St. Paul wrote an epistle to the Romans, that Christ was crucified without the gates of Jerusalem, and that in three days time he rose from the dead; and yet that there is just and reasonable evidence to enforce and support the belief of all these. Where truths are too sublime for present comprehension, he would never admit them as a part of his faith, till he saw full evidence of a speaking God and divine revelation.

His tutor never imposed any thing on him with a magisterial air, but by way of advice recommended to him such studies and such methods of improvement, as his experience had long approved; he gave frequent hints of the danger of some opinions, and the fatal consequences of some modish and mistaken principles. He let him know generally what sentiments he himself embraced among the divided opinions of the age; and what clear and comprehensive knowledge, what satisfaction of judgment, serenity of mind, and peace of conscience, were to be found in the principles which he had chosen; but he exhorted his pupil still to choose wisely for himself, and led him onward in the sciences, and, in common and sacred affairs, to frame his own sentiments by just rules of reasoning: Though *Eugenio* did not superstitiously confine his belief to the opinions of his instructor, yet he could not but love the man that indulged him in such a liberty of thought, and gave him such an admirable clue, by which he let himself into the secrets of knowledge, human and divine: Thus, under the happy and insensible influences of so prudent a supervisor, he traced the paths of learning, and enjoyed the unspeakable pleasure of being his own teacher, and of framing his opinions himself. By this means he began early to use his reason with freedom, and to judge for himself, without a servile submission to the authority of others; and yet to pay

a just and solemn deference to persons of age and experience, and particularly to those who were the proper and appointed guides of his youth, and who led him on so gently in the paths of knowledge.

He loves to call himself by the honourable name of a Christian: and though his particular sentiments approach much nearer to the opinions of some parties than to others; yet he likes not to be called by the name of any party, for he is wise and bold enough to be a bigot to none. He practises a noble and an extensive charity to those that, in lesser matters, differ widely from him, if they do but maintain the most essential and necessary parts of Christianity; nor does he seclude them from his communion, nor withhold himself from theirs; but as the providence of God gives him just occasions, he eats and drinks with them at the table of their common Lord, provided always that they impose nothing upon his practice contrary to his conscience.

Yet his charity has its limits too: For he hardly knows how to worship the Son of God in the most solemn ordinance of communion with those that esteem him but a mere man; nor can he join with an assembly of professed Socinians to commemorate the death of Christ, who deny it to be a proper atonement for the sins of men.

He dares to believe the doctrines of original sin, the satisfaction of Christ, the influences of the blessed Spirit, and other despised truths of the gospel; and this not because his ancestors believed them, but because he cannot avoid the evidence of them in scripture. And if in some few points of less importance he takes leave to differ from the sentiments of his elders, it is with such a becoming modesty, that convinces his father how unwilling he is to dissent from him; and yet he maintains his opinion with such an appearance of argument, and such an honest concern for truth and piety, that makes it plain to his friends, that he is under the strong constraint of an inward conviction. Thus, though he has perhaps some new apprehensions of things, yet he is by no means led into them by a licentious humour of opposing his teachers, nor a wanton pride of free-thinking.

He was not kept a stranger to the errors and follies of mankind, nor was he let loose among them, either in books or in company, without a guard and a guide. His preceptor let him know the gross mistakes and iniquities of men, ancient and modern, but inlaid him with proper principles of truth and virtue, and furnished him with such rules of judgment, as led him more easily to distinguish between good and bad; and thus he was secured against the infection and the poison both of the living and the dead.

He had early cautions given him to avoid the bantering tribe of mortals, and was instructed to distinguish a jest from an argument, so that a loud laugh at his religion never puts him nor his faith out of countenance. He is ever ready to render a reason of his christian hope, and to defend his creed but he scorns to enter the lists with such a disputant that has no artillery but squib and flash, no arguments besides grimace and ridicule. Thus he supports the character of a Christian with honour; he confines his faith to his Bible, and his practice to all the rules of piety; and yet thinks as freely as that vain herd of atheists and deists who arrogate the name of free-thinkers to themselves.

You will enquire, perhaps, how he came to attain so manly a conduct in life at so early an age, and how every thing of the boy was worn off so soon? Truly, besides other influences, it is much owing to the happy management of *Eraste*, (that was the name of the lady his mother;) she was frequent in the nursery, and inspired sentiments

into his childhood becoming riper years. When there was company in the parlour, with whom she could use such a freedom, she brought her son in among them, not to entertain them with his own noise and tattle and impertinence, but to hear their discourse, and sometimes to answer a little question or two they might ask him. When he was grown up to a youth, he was often admitted into the room with his father's acquaintance, and was indulged in the liberty to ask and enquire on subjects that seemed to be above his years: He was encouraged to speak a sentence or two of his own thoughts, and thus to learn and practise a modest assurance. But when the company was gone, he was approved and praised if he had behaved well, or received kind hints of admonition that he might know when he had been too silent, and when too forward to speak. Thus, by enjoying the advantage of society above the level of his own age and understanding, he was always aspiring to imitation; and the excesses and defects of his conduct were daily noticed and cured.

His curiosity was gratified abroad with new sights and scenes, as often as his parents could do it with convenience, that he might not stare and wonder at every strange object or occurrence; but he was made patient of restraint and disappointment, when he seemed to indulge an excessive desire of any needless diversion. If he sought any criminal pleasures, or diversions attended with great danger and inconvenience, the pursuit of them was absolutely forbidden; but it was done in so kind a manner, as made the guilt or peril of them appear in the strongest light, and thereby they were rendered hateful or formidable, rather than the objects of wish or desire.

When *Eugenio* first began to go abroad in the world, his companions were recommended to him by the prudence of his parents; or if he chose them himself, it was still within the reach of his tutor's observation, or the notice of his father's eye: Nor was he suffered to run loose into promiscuous company, till it appeared that his mind was furnished with steady principles of virtue; till he had knowledge enough to defend those principles, and to repel the assaults that might be made upon his faith. And for this reason, till he was twenty years old, he gave account to his superiors how he spent the day, whensoever he was absent from them; though they did not at that age require that he should ask formal leave for a few hours, excursion.

Yet it was hardly thought fit to trust him to his own conduct for whole days together, lest he should meet with temptations too hard for his virtue, till he had gained resolution enough to say No, boldly; and to maintain an obstinate refusal of pernicious pleasures. He was told beforehand how the profane and the lewd would use all the arts of address, and how subtilely they would practise upon his good humour with powerful and tempting importunities. This set him ever upon his guard, and though he carried his sweetness of temper always about with him, yet he learned to conceal it wheresoever it was neither proper nor safe to appear. By a little converse in the world, he found that it was necessary to be positive, bold, and unmoveable in rejecting every proposal which might endanger his character or his morals: Especially as he soon became sensible that a soft and cold denial gave courage to new attacks, and left him liable to be teized with fresh solicitations. He laid down this, therefore, for a constant rule, that where his reason had determined any practice to be either plainly sinful, or utterly inexpedient, he would give so firm a denial, upon the principles of virtue and religion, as should for ever discourage any further solicitations. This gave him the character of a man of resolute virtue, even among the rakes of the time, nor was he ever esteemed the less on that account. At

first, indeed, he thought it a happy victory which he had gotten over himself, when he could defy the shame of the world, and resolve to be a Christian in the face of vice and infidelity: He found the shortest way to conquer this foolish shame was to renounce it at once: Then it was easy to practise singularity amidst a profane multitude. And when he began to get courage enough to profess resolute piety without a blush, in the midst of such company as this, *Agathus* and *Eraste* then permitted their son to travel abroad, to see more of the world, under the protection of their daily prayers. His first tour was through the neighbouring counties of England; he afterward enlarged the circuit of his travels, till he had visited foreign nations, and learned the value of his own.

In short, the restraints of his younger years were tempered with so much liberty, and managed with such prudence and tenderness, and these bonds of discipline were so gradually loosened, as fast as he grew wise enough to govern himself, that *Eugenio* always carried about with him an inward conviction of the great love and wisdom of his parents and his tutor. The humours of the child now and then felt some reluctance against the pious discipline of his elders: But now he is arrived at manhood, there is nothing that he looks back upon with greater satisfaction than the steps of their conduct and the instances of his own submission. He often recounts those things with pleasure, as some of the chief favours of heaven, whereby he was guarded through all the dangers and follies of youth and childhood, and effectually kept, through divine grace operating by these happy means, from a thousand sorrows, and perhaps from everlasting ruin.

Though he has been released some years from the strictness of paternal government, yet he still makes his parents his chosen friends: And though they cease to practise authority upon him and absolute command, yet he pays the utmost deference to their counsels, and to the first notice of their inclinations. You shall never find him resisting and debating against their desires and propensities in little common things of life, which are indifferent in themselves; he thinks it carries in it too much contempt of those whom God and nature require him to honour. In those instances of practice which they utterly forbid in their family, he bears so tender a regard to their peace, that he will scarcely ever allow himself in them, even when he cannot see sufficient reason to pronounce them unlawful. Nor does he pay this regard to his parents alone, but denies himself in some gratifications which he esteems innocent, out of regard to what he accounts the mistaken judgment of some pious persons with whom he converses and worships. They are weak, perhaps, in their austerities; but Saint Paul has taught him, that *the strong ought to bear with the infirmities of the weak, and not to please themselves to the offence of the church of God.* This he observed to be the constant practice of *Agathus* and *Eraste*, and he maintains a great regard to the examples of so much piety and goodness, even though his reason does not lead him always to embrace their opinions. Whensoever he enters into any important action of life, he takes a filial pleasure to seek advice from his worthy parents, and it is uneasy to him to attempt any thing of moment without it. He does not, indeed, universally practise all their sentiments, but he gains their consent to follow his own reason and choice.

Some of the wild young gentlemen of the age may happen to laugh at him for being so much a boy still, and for shewing such subjection to the old folks, as they call them: With a scornful smile they bid him "Break off his leading-strings, and cast away his yokes of bondage." But for the most part he observes, that the same persons shake off all yokes at once, and at once break the bonds of nature, duty, and religion: They pay

but little regard to their superior in heaven, any more than to those on earth, and have forgotten God and their parents together. "Nor will I ever be moved," says he, "with the reproaches of those who make a jest of things sacred as well as civil, and treat their mother and their Maker with the same contempt."

SECTION XI.

OF PROPER DEGREES OF LIBERTY AND RESTRAINT IN THE EDUCATION OF DAUGHTERS, ILLUSTRATED BY EXAMPLES.

IT is necessary that youth should be laid under some restraint. When our inclinations are violent, and our judgment is weak, it was a wise provision of God our Creator, that we should be under the conduct of those who were born before us; and that we should be bound to obey them, who have an innate solicitude for our happiness, and are much fitter to judge for our advantage, than we ourselves can be in that early part of life.

But it may be said, liberty is so glorious a blessing, that surely it ought not utterly to be taken away from the young, lest their spirits be cramped and enslaved, and the growth of their souls so stinted by a narrow and severe restraint, that they act all their lives like children under age. Or sometimes a too rigid confinement will have the contrary effect, and make the impatience of youth break out beyond all bounds, as soon as ever they get the first relish of freedom.

But O, how exceedingly difficult it is to hit the middle way! How hard for parents to manage their own authority with so much gentleness, and to regulate the liberties of their children with so wise a discipline, as to fall into neither extreme, nor give unhappy occasion for censure! Though I have spoken my opinion freely, that it is safer to err on the side of restraint, than of excessive indulgence.

Antigone had an excellent mother, but she died young: *Antigone*, with her elder sister, from their very infancy, were placed under a grandmother's care. The good old gentlewoman trained them up precisely in the forms in which she herself was educated, when the modes of breeding had, it must be confessed, too much narrowness and austerity. She gave them all the good instructions she had received from her ancestors, and would scarcely ever suffer them to be out of her sight. She saw the eldest well married at five-and-twenty, and settled in a course of virtue and religion: She found her zeal and pious care attended with success in several of her posterity, and she departed this life in peace.

But unhappy *Antigone* took a different turn: She was let loose into the world with all her possessions and powers in her own hand; and falling into vain company, she got such a taste of unbounded liberty and modish vices, that she would never reflect upon the method of her own education without angry remarks or ridicule.

When she came to have children of her own, she still retained the resentment which she had conceived at the conduct of her grandmother, and therefore she resolved that her daughters should be bred up in the other extreme.

"In my younger times," said she, "we were kept hard to the labour of the needle, and spent six hours a day at it, as though I were to get my bread by my finger-ends;

but a little of that business shall serve these children, for their father has left them good fortunes of their own.

"We were not suffered to read any thing but the Bible and sermon-books; but I shall teach mine politer lessons out of plays and romances, that they may be acqua inted with the world betimes.

"My elder sister was scarcely ever allowed to speak in company till she was married, and it was a tiresome length of years before that day came. The old proverb ran thus, *That a maiden must be seen, and not heard:* But I hope my little daughters will not be dumb.

"We were always confined to dwell at home, unless some extraordinary occasion called us abroad, perhaps once in a month, or twice in a summer. We were taught to play the good housewife in the kitchen and the pastry, and were well instructed in the conduct of the broom and the duster; but we knew nothing of the mode of the court, and the diversions of the town. I should be ashamed to see these young creatures, that are under my care, so awkward in company at fourteen, as I was at four-and-twenty."

And thus *Antigone* brought up her young family of daughters agreeably to her own loose notions; for she had formed her sentiments of education merely from the aversion she had conceived to the way of her elders, and chose the very reverse of their conduct for her rule, because their piety and wisdom had a little alloy of rigour and stiffness attending it.

The young things, under their mother's eye, could manage the tea-table at ten years old, when they could scarcely read a chapter in the New Testament. At fourteen, they learned the airs of the world; they gad abroad at their pleasure, and will hardly suffer *Antigone* to direct them or go with them; they despise the old woman betimes, for they can visit without her attendance, and prattle abundantly without her prompting.

She led or sent them to the playhouse twice or thrice a week, where a great part of their natural modesty is worn off and forgotten: Modesty, the guard of youthful virtue! They can talk love-stories out of *Cleopatra:* They are well practised already in the arts of scandal, and, for want of better furniture of mind, emptiness and impertinence, ribands and fashions, gay gentlemen and wanton songs, ever dwell upon their tongues. They have been taught so little to set a guard upon themselves, that their virtue is much suspected. But, be that as it will, they are seized and married before sixteen, being tempted away to bind themselves for life to a laced coat and a fashionable wig. Thus children set up at once to govern a family; but so ignorant in all those concerns, that, from the garret to the kitchen, the whole house is entirely ruled by the humour of the servants, because the young mistress knows not how to instruct or correct them. There is neither religion nor prudence among them, at home or abroad. Thus they make haste to ruin and misery in this world, without thought or hope of the world to come, and the heaven or the hell that await us there.

Antigone sees her own mistake too late; and though she has not so just a sense and horror of their loose and profane life as would become her years, yet she is vexed to see herself neglected so soon, and scorned by her own children; but she confesses, with a sigh, that she has led them the way, by laughing so often at her good old grandmother.

How much wiser is *Phronissa* in the education that she gives her daughters, who maintains a happy medium between the severity of the last age, and the wild licence of

this! She manages her conduct toward them with such an admirable felicity, that though she confines them within the sacred limits of virtue and religion, yet they have not a wish beyond the liberties which they daily enjoy.

Phronissa, when her daughters were little children, used to spend some hours daily in the nursery, and taught the young creatures to recite many a pretty passage out of the Bible, before they were capable of reading it themselves; yet at six years old they read the Scriptures with ease, and then they rejoiced to find the same stories in *Genesis* and in the Gospels which their mother had taught them before. As their years advanced, they were admitted into the best conversation, and had such books put into their hands, as might acquaint them with the rules of prudence and piety in an easy and familiar way: The reading the lives of eminent persons who were examples of this kind, was one of the daily methods she used, at once to instruct and entertain them. By such means, and others which she wisely adapted to their advancing age, they had all the knowledge bestowed upon them that could be supposed proper for women, and that might render their character honourable and useful in the world.

As for plays and romances, they were ever bred up in a just apprehension of the danger and mischief of them: *Collier's View of the Stage* was early put into their closets, that they might learn there the hideous immorality and profaneness of the English comedies; and by the way, he forbids us to hope from our tragical poets a much safer entertainment. There they might read enough to forbid their attendances on the playhouse, and see the poison exposed, without danger of the infection. The servants that waited on them, and the books that were left within their reach, were such as never corrupted their minds with impure words or images.

Long has *Phronissa* known that domestic virtues are the business and the honour of her sex. Nature and history agree to assure her, that the conduct of the household is committed to the women, and the precepts and examples of Scripture confirm it. She educated her daughters, therefore, in constant acquaintance with all family affairs, and they knew betimes what belonged to the provisions of the table, and the furniture of every room. Though her circumstances were considerable in the world, yet, by her own example, she made her children know, that a frequent visit to the kitchen was not beneath their state, nor the common menial affairs too mean for their notice; that they might be able hereafter to manage their own house, and not be directed, imposed upon, and perhaps ridiculed by their own servants.

They were initiated early in the science of the needle, and were bred up skilful in all the plain and flowery arts of it; but it was never made a task nor a toil to them, nor did they waste their hours in those nice and tedious works, which cost our female ancestors seven years of their life, and stitches without number. To render this exercise pleasant, one of them always entertained the company with some useful author, while the rest were at work; every one had freedom and encouragement to start what question she pleased, and to make any remarks on the present subject; that reading, working, and conversation, might fill up the hour with variety and delight. Thus while their hands were making garments for themselves or for the poor, their minds were enriched with treasures of human and divine knowledge.

At proper seasons the young ladies were instructed in the gayer accomplishments of their age: But they were taught to esteem the song and the dance some of their

meanest talents, because they are often forgotten in advanced years, and add but little to the virtue, the honour, or the happiness of life.

Phronissa herself was sprightly and active, and she abhorred a slothful and lazy humour; therefore, she constantly found out some inviting and agreeable employment for her daughters, that they might hate idleness as a mischievous vice, and be trained up to an active and useful life. Yet she perpetually insinuated the superior delights of the closet, and tempted them by all divine methods to the love of devout retirement. Whensoever she seemed to distinguish them by any peculiar favours, it was generally upon some new indication of early piety, or some young practice of a self-denying virtue.

They were taught to receive visits in form, agreeably to the age; and though they knew the modes of dress sufficiently to secure them from any thing awkward or unfashionable, yet their minds were so well furnished with richer variety, that they had no need to run to those poor and trivial topics, to exclude silence and dulness from the drawing-room. They would not give such an affront to the understandings of the ladies their visitants, as to treat them with such meanness and impertinence; therefore all this sort of conversation was reserved, almost entirely, for the minutes appointed to the milliner and the tire-woman.

Here I must publish it to their honour, to provoke the sex to imitation, that though they comported with the fashion in all their ornaments, so far as the fashion was modest, and could approve itself to reason or religion, yet *Phronissa* would not suffer their younger judgments so far to be imposed on by custom, as that the mode should be entirely the measure of all decency to them. She knew there is such a thing as natural harmony and agreeableness; in the beauties of colour and figure, her delicacy of taste was exquisite; and where the mode ran counter to nature, though she indulged her daughters to follow it in some innocent instances, because she loved not to be remarkably singular in things of indifference, yet she took care always to teach them to distinguish gay folly and affected extravagance from natural decencies, both in furniture and in dress: Their rank in the world was eminent, but they never appeared the first, nor the highest in any new-fangled forms of attire. By her wise example and instructions she has so formed their minds, as to be able to see garments more gaudy, and even more modish than their own, without envy or wishes. They could bear to find a trimming set on a little awry, or the plait of a garment ill-disposed, without making the whole house and the day uneasy, and the sun and the heavens smile upon them in vain.

Phronissa taught them the happy art of managing a visit with some useful improvement of the hour, and without offence. If a word of scandal occurred in company, it was soon diverted or suppressed. The children were charged to speak well of their neighbours as far as truth would admit, and to be silent as to any thing further: But when the poor or the deformed were mentioned in discourse, the aged, the lame, or the blind, those objects were handled with the utmost tenderness; nothing could displease *Phronissa* more than to hear a jest thrown upon natural infirmities: She thought there was something sacred in misery, and it was not to be touched with a rude hand. All reproach and satire of this kind were for ever banished where she came; and if ever raillery was indulged, vice and wilful folly were the constant subjects of it.

Persons of distinguished characters she always distinguished in her respect, and trained up her family to pay the same civilities. Whensoever she named her own parents

it was with high veneration and love, and thereby she naturally led her children to give due honour to all their superior relatives.

Though it is the fashion of the age to laugh at the priesthood in all forms, and to teach every boy to scoff at a minister, *Phronissa* paid *double honours* to them *who laboured in the word and doctrine*, where their personal behaviour upheld the dignity of their office; for she was persuaded Saint Paul was a better director than the gay gentlemen of the mode; 1 *Tim.* v. 17. Besides she wisely considered that a contempt of their persons would necessarily bring with it a contempt of all their ministrations; and then she might carry her daughters to the church as much as she pleased, but preaching and praying, and all sacred things, would grow despicable and useless when they had first learned to make a jest of the preacher.

But are these young ladies always confined at home? Are they never suffered to see the world? Yes, and sometimes without the guard of a mother too; though *Phronissa* is so well beloved by her children, that they would very seldom choose to go without her. Their souls are inlaid betimes with the principles of virtue and prudence; these are their constant guard; nor do they ever wish to make a visit where their mother has reason to suspect their safety.

They have freedom given them, in all the common affairs of life, to choose for themselves; but they take pleasure, for the most part, in referring the choice back again to their elders. *Phronissa* has managed the restraint of their younger years with so much reason and love, that they have seemed all their lives to know nothing but liberty; an admonition of their parents meets with cheerful compliance, and is never debated. A wish or desire has the same power over them now, as a command had in their infancy and childhood; for the command was ever dressed in the softest language of authority, and this made every act of obedience a delight, till it became an habitual pleasure.

In short, they have been educated with such discretion, tenderness, and piety, as have laid a foundation to make them happy and useful in the rising age: Their parents with pleasure view the growing prospect, and return daily thanks to Almighty God, whose blessing has attended their watchful cares, and has thus far answered their most fervent devotions.

THE

KNOWLEDGE OF THE HEAVENS AND THE EARTH

MADE EASY:

OR,

THE FIRST PRINCIPLES

OF

GEOGRAPHY AND ASTRONOMY

EXPLAINED

BY THE

USE OF GLOBES AND MAPS.

WITH A SOLUTION OF THE COMMON PROBLEMS

BY

A PLAIN SCALE AND COMPASSES, AS WELL AS BY THE GLOBE.

TO MY LEARNED FRIEND

MR. JOHN EAMES, F.R.S.

Dear Sir,

It would be mere trifling to say any thing to you of the excellency and great advantage of those sciences whose first rudiments I have here drawn up. Your large acquaintance with these matters hath given you a just relish of the pleasure of them, and well informed you of their solid use. But, perhaps, it is necessary to excuse myself to the world, if I publish some of the fruits of my former studies on such subjects as these. I would therefore willingly have the unlearned part of mankind apprized of the necessity and general use of this sort of learning; and that not only to civil, but to sacred purposes.

If you, Sir, would please to take upon you this service, you would make it appear with rich advantage how far the knowledge of things human and divine is influenced and improved by these studies.

You can tell the world, that it is the knowledge of this globe of earth on which we tread, and of those heavenly bodies which seem to roll around us, that hath been wrought up into these two kindred sciences, geography and astronomy. And there is not a son or daughter of Adam but has some concern in both of them, though they may not know it in a learned way.

This earth is given us for a habitation: It is the place of present residence for all our fellow-mortals: Nor is it possible that there should be any commerce maintained with those who dwell at a distance, without some acquaintance with the different tracts of land, and the rivers or seas that divide the regions of the earth.

The heavenly bodies, which are high over our heads, measure out our days and years, our life and time, by their various revolutions. Now life and time are some of the dearest things we have, and it is of important concern to distinguish the hours as they pass away, that proper seasons may be chosen and adapted for every business.

You know, Sir, that those necessary and useful instruments, clocks, watches, and dials, owe their origin to the observations of the heavens: The computation of months

and years had been for ever impracticable without some careful notice of the various situations and appearances of those shining worlds above us.

I shall be told, perhaps, that these are not my special province. It is the knowledge of God, the advancement of religion, and converse with the Scriptures, are the peculiar studies which Providence has assigned me. I know it, and I adore the divine favour. But I am free and zealous to declare, that without commencing some acquaintance with these mathematical sciences, I could never arrive at so clear a conception of many things delivered in the Scriptures; nor could I raise my ideas of God the Creator to so high a pitch: And I am well assured that many of the sacred function will join with me and support this assertion from their own experience.

If we look down to the earth, it is the theatre on which all the grand affairs recorded in the Bible have been transacted. How is it possible that we should trace the wanderings of Abraham that great patriarch, and the various toils and travels of Jacob, and the seed of Israel in successive ages, without some geographical knowledge of those countries? How can our meditations follow the blessed apostles in their laborious journies through Europe and Asia, their voyages, their perils, their shipwrecks, and the fatigues they endured for the sake of the gospel; unless we are instructed by maps and tables, wherein those regions are copied out in a narrow compass, and exhibited in one view to the eye?

If we look upward with David, to the worlds above us, *we consider the heavens as the work of the finger of God, and the moon and the stars which he hath ordained.* What amazing glories discover themselves to our sight? What wonders of wisdom are seen in the exact regularity of their revolutions? Nor was there ever any thing that has contributed to enlarge my apprehensions of the immense power of God, the magnificence of his creation, and his own transcendent grandeur, so much as that little portion of astronomy which I have been able to attain. And I would not only recommend it to young students for the same purposes, but I would persuade all mankind, if it were possible, to gain some degrees of acquaintance with the vastness, the distances, and the motions of the planetary worlds on the same account. It gives an unknown enlargement to the understanding, and affords a divine entertainment to the soul and its better powers. With what pleasure and rich profit would men survey those astonishing spaces in which the planets revolve, the hugeness of their bulk, and the almost incredible swiftness of their motions? And yet all these governed and adjusted by such unerring rules, that they never mistake their way, nor lose a minute of their time, nor change their appointed circuits in several thousands of years! When we muse on these things we may lose ourselves in holy wonder, and cry out with the Psalmist, *Lord, what is man, that thou art mindful of him? and the son of man, that thou shouldest visit him?*

It was chiefly in the younger part of my life, indeed, that these studies were my entertainment; and being desired, both at that time, as well as since, upon some occasions, to lead some young friends into the knowledge of the first principles of geo-

graphy and astronomy, I found no treatise on those subjects written in so very plain and comprehensive a manner as to answer my wishes: Upon this account I drew up the following papers, and set every thing in that light in which it appeared most obvious and easy to me.

I have joined the general part of these two sciences together: What belongs particularly to each of them is cast into distinct sections. And I wish, Sir, you would present the world with the special part of astronomy drawn up for the use of learners in the most plain and easy method, to render this work more complete.

Most of the authors, which I perused in those days when I wrote many parts of this book, were of older date: And therefore the calculations and numbers which I borrowed from their astronomical tables cannot be so exact as those with which some later writers have furnished us: For this reason the account of the sun's place in the ecliptic, the declination and right ascension of the sun and the stars in some parts of the book, especially in the solution of some of the problems in the 20th Section, may perhaps need a little correction; though I hope the theorems will appear true in the speculation, and the problems so regular and successful in the practice as is sufficient for a learner. However, to apply some remedy to this inconvenience, there are added at the end of the book some later tables, which are formed according to the celebrated Mr. Flamsteed's observations.

I have exhibited near forty problems to be practised on the globe, and thirty-five more of various kinds, to be performed by manual operation with the aid of some geometrical practices. These were very sensible allurements to my younger enquiries into these subjects, and I hope they may attain the same effect upon some of my readers.

It was my opinion that it would be a very delightful way of learning the doctrine and uses of the sphere, to have them explained by a variety of figures or diagrams; this is certainly much wanting in most authors that I have perused. I have therefore drawn thirty figures with my own hand, in order to render the description of every thing more intelligible.

I have endeavoured to entertain younger minds, and entice them to these studies, by all those easy and agreeable operations relating both to the earth and the heavens, which probably may tempt them on to the higher speculations of the great Sir Isaac Newton and his followers on this subject.

Yet there should be a due limit set to these enquiries too, according to the different employments of life to which we are called: For it is possible a genius of active curiosity may waste too many hours in the more abstruse parts of these subjects which God and his country demand to be applied to the studies of the law, physic, or divinity, to merchandize or mechanical operations.

If I had followed the conduct of mere inclination, perhaps I should have laid out more of my serene hours in speculations which are so alluring: And then indeed I might

have performed what I have here attempted in a manner more answerable to my design, and left less for the critics to censure, and my friends to forgive. But, such as it is, I put it entirely, Sir, into your hands to review and alter whatsoever you please, and make it answerable to that idea which I have formed of your skill. Then if you shall think fit to present it to the world, I persuade myself I shall not be utterly disappointed in the views I had in putting these papers together, many of which have lain by me in silence above twenty years.

Farewel, dear Sir, and forgive the trouble that you have partly devolved on yourself by the too favourable opinion you have conceived both of these sheets and of the writer of them, who takes a pleasure to tell the world that he is, with great sincerity,

SIR,

Your most obedient servant,

I. WATTS.

Theobalds, in Hertfordshire,
June 11, 1725.

TO THE READER.

I THINK myself obliged, in justice to the ingenious author as well as the public, to assure them that the alterations I have ventured to make in the revisal of this work, are but few and small. The same perspicuity of thought and ease of expression which distinguish his other works running through the whole of this, I do not question but the world will meet with equal pleasure and satisfaction in the perusal.

JOHN EAMES.

August 20, 1725.

THE

FIRST PRINCIPLES

OF

GEOGRAPHY AND ASTRONOMY.

SECTION I.

OF THE SPHERES OR GLOBES OF THE HEAVEN AND EARTH.

THERE is nothing gives us a more easy or speedy acquaintance with the earth and the visible heavens than the representation of them on a globe or sphere; because hereby we have the most natural image of them set before our eyes.

The *terrestrial globe* represents the earth with its several lands, seas, rivers, islands, &c. The *celestial sphere* or *globe* represents the heavens and stars.

Several points and circles are either marked or described on these spheres or globes, or are represented by the brass or wooden work about them, to exhibit the places and the motions of the sun, moon, or stars, the situation of the several parts of the earth, together with the relation that all these bear to each other.

The earthly globe, with the lines and signs and points that are usually marked upon it, is sufficient to inform the reader of almost every thing that I shall mention here, even with regard to the heavens, the sun, and the planets; unless he has a mind to be particularly acquainted with the fixed stars, and the several uses of them; then indeed a celestial globe is most convenient to be added to it.

Note I. Half the globe is called a *hemisphere;* and thus the whole globe or sphere of the heavens or of the earth may be represented on a flat or plane in two hemispheres, as in the common maps of the earth, or in draughts or descriptions of the heavens and stars.

Because globes are not always at hand, the several points and circles, together with their properties, shall be so described in this discourse, as to lead the reader into some general and imperfect knowledge of these things, as far as it may be done by a map of the world, which is nothing else but a representation of the globe of earth and waters on two flat or plain surfaces; or at least I shall so express these matters, that a map will assist him to keep them in remembrance, if he has been first a little acquainted with the globe itself.

Note II. Though the latest and best astronomers have found that the sun is fixed in or near the centre of our world, and that the earth moves round its own axis once in twenty-four hours with a circular motion, and round the sun once in a year with a progressive motion; yet to make these things more easy and intelligible to those that

are unskilful, we shall here suppose the sun to move round the earth, both with a daily and yearly motion, as it appears to our senses; *viz.* daily going round the earth, and yet every day changing its place a little in the heavens, till in a year's time it returns to the same place again.

SECTION II.

OF THE GREATER CIRCLES.

THE greater circles are such as divide the globe into two equal parts, and are these four; *viz.* the *horizon*, the *meridian*, the *equator*, and the *ecliptic*.

I. The *horizon* is a broad flat circle, or the wooden frame in which the globe stands. Its upper edge divides the globe into the upper and lower halves or hemispheres, and represents the line or circle which divides between the upper and the lower parts of the earth and heavens, and which is called the horizon. This circle determines the rising or setting of sun or stars, and distinguishes day and night.

When the sun is in the east part of the horizon, it is rising. When in the west part, it is setting. When it is above the horizon, it is *day:* When below, it is *night.*

Yet till the sun be 18 degrees below the horizon, it is usually called *twilight;* because the sun-beams shooting upward are reflected down to us by the atmosphere after sun-set or before sun-rise: And it is upon this account that in our horizon at London, there is no perfect night in the very middle of summer for two months together, because the sun is not 18 degrees below the horizon.

The horizon is distinguished into the *sensible* and the *rational.* See *Figure* 1.

The sensible horizon supposes the spectator placed on *s* the surface of the earth or water, and it reaches as far as the eye can see. But the rational or true horizon supposes the spectator placed in the centre of the earth *c*, and thus divides the globes both of the heavens and the earth into halves.

Suppose, in *Figure* 1. the circle *s d p e* is the earth, *u b h n r g* the heavens, *b s g* the line making the sensible horizon, *h r* the rational horizon.

The sensible horizon on the earth or sea includes *a s o*, and it reaches but a very few miles; for if a man six feet high stood on a large plain, or on the surface of the sea, at *s*, he could not see the sea itself, or the land, further than three miles round.

Thus it appears that the sensible horizon on the earth or sea, *a s o*, differs very much from the extent of the real or rational horizon *d s e*. But as to the heavens, where the fixed stars are, the sensible horizon *b u g* scarce differs at all from the rational horizon *h u r:* For the eye, placed in the centre of the earth *c*, or on the surface of it *s*, would find no evident difference in the horizon of the fixed stars, because they are at so immense a distance, that in comparison thereof half the diameter of the earth, that is *s c* or *g r* the distance between the surface and the centre is of no consideration.

But let it be observed here, that the planets are much nearer to the earth than the fixed stars are: And therefore half the diameter of the earth, that is, *s c* or *g r* is of some consideration in the horizon of the planets.

It may not therefore be improper to note in this place, that suppose a planet to be at *g*, if the eye of the spectator were on the surface of the earth at *s*, he would

behold it as level with the horizon: But if his eye were at the centre of the earth at *c*, he would behold it raised several degrees or minutes above the horizon, even the quantity of the angle *g c r*, or, which is all one, *s g c*.

Now the difference between the place where a planet appears to a spectator placed on the centre of the earth, and to a spectator placed on the surface, is called the *parallax* of that planet at that time; and therefore the difference between those two places *g* and *r*, or rather the quantity of the angle *g c r*, or *s g c*, is called its *horizontal parallax*. And this is of great use to adjust the real distances, and consequently the real magnitudes of the several planets. But this doctrine of parallaxes belongs rather to the second, or special part of astronomy.

II. The *meridian* is a great brazen circle in which the globe moves; it crosses the horizon at right angles, and divides the globe into the eastern and western hemispheres. It represents that line or circle in the heaven which passes just over our head, and cutting the horizon in the north and south points of it, comes just under our feet on the opposite side of the globe.

This circle shews when the sun or stars are just at north or south, and determines noon or midnight.

When the sun is on the meridian and above the horizon to us in Great Britain, it is just in the south, and it is *noon*. When it is on the meridian and under the horizon, it is just in the north, and it is *midnight*.

Note, Whensoever we move on the earth, whether east, west, north, or south, we change our horizon both sensible and rational, for every motion or change of place gives us a hemisphere of sky or heaven over our head a little different from what it was; and we can see less on one side of the globe of the earth and more on the other side.

Whensoever we move toward the east or west we change our meridian: But we do not change our meridian if we move directly to the north or south.

Upon this account the horizon and meridian are called changeable circles, and the globe is made moveable within these circles to represent this changeableness, whereby every place on the earth may be brought under its proper meridian, and be surrounded with its proper horizon.

III. The *equator* or *equinoctial line* crosses the meridian at right angles, and divides the globe into the northern and southern hemispheres; and distinguishes the sun's yearly path into the *summer* and *winter* half-years. It represents in the heavens that very line or circle which is the path of the sun in those two days in spring and autumn when the days and nights are of equal length.

Among all the circles of the globe this is sometimes eminently called *the line;* and passing over it at sea is called by sailors *crossing the line*.

Note, The sun, moon, and stars, with all the frame of the heavens, are supposed to be whirled round from east to west every twenty-four hours upon the axis of the equator, or, which is all one, in their several paths parallel to the equator. This is called their *diurnal* or *daily motion*.

IV. The *ecliptic line* is the sun's annual or yearly path, cutting the equinoctial in two opposite points obliquely at the angles of $23\frac{1}{2}$ degrees. On it are figured the marks of the 12 signs through which the sun passes, *viz. Aries*, the Ram ♈, *Taurus*, the Bull ♉, *Gemini*, the Twins ♊, *Cancer*, the Crab ♋, *Leo*, the Lion ♌, *Virgo*, the Virgin ♍;

Libra, the Balance ♎, *Scorpio*, the Scorpion ♏, *Sagittarius*, the Archer ♐, *Capricornus*, the Sea-Goat ♑, *Aquarius*, the Waterer ♒, *Pisces*, the Fishes ♓.

These signs are certain constellations, or numbers of stars which are reduced by the fancy of men, for distinction sake, into the form of twelve animals, and for the use of the English reader may be described thus:

The *Ram*, the *Bull*, the heavenly *Twins*,
And next the *Crab*, the *Lion* shines,
The *Virgin*, and the *Scales*;
The *Scorpion*, *Archer*, and *Sea-goat*,
The *Man* that holds the *Water-pot*,
And *Fish* with glittering Tails.

Among these signs, *Aries*, *Taurus*, *Gemini*, *Cancer*, *Leo*, *Virgo*, are called northern. But *Libra*, *Scorpio*, *Sagittarius*, *Capricornus*, *Aquarius*, *Pisces*, are southern. *Capricorn*, *Aquarius*, *Pisces*, *Aries*, *Taurus*, *Gemini*, are ascending signs, because they stand in succession northward, or rising gradually higher in our European hemisphere: But *Cancer*, *Leo*, *Virgo*, *Libra*, *Scorpio*, *Sagittarius*, are descending signs, for their succession tends lower toward our horizon, or rather toward the southern hemisphere.

Each of these signs has 30 degrees of the ecliptic allotted to it. The sun or any planet is said to be in such a sign when he is between our eye and that sign, or when he appears in that part of the heavens where those stars are of which the sign is composed.

If it be enquired, how we can know the place of the sun among the stars, since all the stars near it are lost in the sun-beams? It is answered, that we can see plainly what constellation or what stars are upon the meridian at midnight, and we know the stars which are exactly opposite to them, and these must be upon the meridian, very nearly, the same day at noon; and thereby we know that the sun at noon is in the midst of them. So that when you have a globe at hand on which the stars are delineated, you find on what degree of any sign the sun is in, on any given day, and see the stars around it.

The sun is reckoned to go through almost one sign every month or 30 days, and thus to finish the year in 365 days 5 hours and 49 minutes, *i. e.* near 6 hours: So that the sun may be supposed to move slowly as a snail through almost one degree of the ecliptic line every day from the west to the east, while it is whirled round together with the whole frame of the heavens from east to west, in a line parallel to the equator in the time of 24 hours.

Note, We vulgarly call the sun's diurnal or daily path a parallel to the equator, though properly it is a spiral line, which the sun is ever making all the year long, gaining one degree on the ecliptic daily.

From what has been now said it appears plainly, that the equinoctial line, or equator itself, is the diurnal path of the sun about the 20th or 21st of March and the 23d of September, which are the two opposite points where the ecliptic, or yearly path of the sun cuts the equator.

And these two days are called the equinoctial days, when the sun rises and sets at six o'clock all the world over, *i. e.* where it rises and sets at all that day: And the day

and night are every where of equal length: And, indeed, this is the true reason why this line is called the equator, or the equinoctial.

It may not be improper in this place to remark, that those five hours and 49 minutes, which the sun's annual revolution requires above 365 days, will in four years time amount to nearly a whole day: Therefore every fourth year has 366 days in it, and is called the *Leap-year.*

Note, The super-added day in that year is the 29th of February in Great Britain.

It may be farther remarked also, that the odd eleven minutes which in this account are wanting yearly to make up a complete day of 24 hours, are accounted for in the new style by leaving out a whole day once in 133 or 134 years.* And it is the neglect of accounting for these odd minutes in the old style above a thousand years backwards that has made the difference between the old style and the new to be at present eleven days.

Note, The *zodiac* is fancied as a broad belt spreading about seven or eight degrees on each side of the ecliptic, so wide as to contain most of those stars that make up the 12 constellations or signs.

Note, The inner edge of the wooden horizon is divided into 360 degrees, or 12 times 30, allowing 30 degrees to every sign or constellation, the figures of which are usually drawn there.

The next circle to these on the horizon contains an almanac of the old style, which begins the year eleven days later; and the next circle is an almanac of the new style, which begins so much sooner; and these shew in what sign the sun is, and in what degree of that sign he is every day in the year, whether you count by the old style or the new.

Note, One side or edge of the brazen meridian is also divided into 360 degrees, or four times 90; on the upper semicircle whereof the numbers usually begin to be counted from the equator both ways toward the poles: On the under semicircle they begin to be counted from the poles both ways toward the equator, for special uses, as will afterward appear. And it should be remembered that it is this edge of the brass circle which is graduated or divided into degrees, that is properly the meridian line.

Note, The equator and the ecliptic are called unchangeable circles, because wheresoever we travel or change our place on the earth, these circles are still the same.

SECTION III.

OF THE LESSER CIRCLES.

THE lesser circles divide the globe into two unequal parts, and are these four, all parallel to the equator, *viz.* the two *tropics,* and the two *polar circles.*

I. *The tropic of cancer* just touches the north part of the ecliptic, and describes the sun's path for the longest day in summer: It is drawn at $23\frac{1}{2}$ degrees distance from the

* This was contrived to be done by Pope Gregory, in the year 1582, in this manner: Since three times 133 years make near 400 hundred years, he ordered the additional day to be omitted at the end of three centuries successively, and to be retained at the 400th year or 4th century. But in this reformation of the calendar he looked back no farther than the Council of Nice. This order almost all foreign nations observed: Great Britain did not observe it till the year 1752, when it was introduced and established by Act of Parliament.

equator toward the north. And it is called the tropic of cancer, because the sun enters into that sign the 21st of June, the longest day in the year.

II. *The tropic of capricorn* just touches the south part of the ecliptic, and describes the sun's path for the shortest day in the winter: It is drawn at $23\frac{1}{2}$ degrees distance from the equator toward the south. And it is called the tropic of capricorn, because the sun enters into that sign the 21st of December, the shortest day in the year.

Note, What I speak of the shortest and longest days relates only to us who dwell on the north side of the globe: Those who dwell on the south side have their longest day when the sun is in *capricorn*, and their shortest in *cancer*.

III. and IV. The north and south *polar circles* are drawn at $23\frac{1}{2}$ degrees of distance from each pole, or, which is all one, at 90 degrees distance from the contrary tropic; because the inhabitants under the polar circles just lose the sun under the horizon one whole day at their midwinter, or when it is in the utmost part of the contrary side of the ecliptic; and they keep it one whole day, or 24 hours, above their horizon at their midsummer, or when it is in the nearest part of their side of the ecliptic.

The north polar circle is called the *arctic circle*, and the south is the *antarctic*.

Here I might mention the five zones by which the ancients divided the earth, for they are a sort of broad circles: But perhaps these may be as well referred to the following part of this book.

SECTION IV.

OF THE POINTS.

The most remarkable points in the heavens are these twelve or fourteen:

I. and II. are the two *poles* of the earth or heavens, *viz.* the north and the south, which are ever stedfast, and round which the earth or the heavens are supposed to turn daily, as the globe does upon these iron poles. These are also the poles of the equator, for they are at 90 degrees distance from it.

From one of these poles to the other a supposed line runs through the centre of the globe of earth and heavens, and is called the axis or axle of the world.

III. and IV. are the *zenith*, or point just over our head, and the *nadir*, or the point just under our feet; which may be properly called the two poles of the horizon, for they are 90 degrees distant from it every way.

V. VI. VII. and VIII. are the four *cardinal points* of *east*, *west*, *north*, and *south*: These four points are in the horizon, which divide it into four equal parts.

Note, For the uses of navigation or sailing, each of these quarters of the heavens, east, west, north, and south, are subdivided into eight points, which are called *rhumbs*; so that there are 32 rhumbs or points in the whole, each containing $11\frac{1}{4}$ degrees. These are described on the utmost circle of the wooden horizon.

From the north towards the east these points are named *north and by east*, *north-north-east*, *north-east and by north*, *north-east*; *north-east and by east*, *east-north-east*, *east and by north*; *east*, *&c.* Then from the east toward the south it proceeds much in the same manner.

The whole circle of 360 degrees divided in this manner is called the *mariner's compass*, by which they count from what point of the heavens the wind blows, and toward what

point of the earth they direct their sailing, which they call *steering their course.* See *Figure* 2.

IX. and X. are the two *solsticial points:* These are the beginning of the signs *cancer* and *capricorn* in the ecliptic line, where the ecliptic just touches those two tropics. These points shew the sun's place the longest and shortest days, *viz.* the 21st of June and the 21st of December.

Note, These two days are called the *summer* and *winter solstices,* because the sun seems to stand still, *i. e.* to make the length of days neither increase nor decrease sensibly for 20 days together.

XI. and XII. are *aries* and *libra,* or the two *equinoctial points,* where the ecliptic cuts the equator. When the sun enters into these two signs, the days and nights are equal all over the world. It enters *aries* in spring the 21st of March, which is called the *vernal equinox,* and *libra* in autumn the 23d of September, which is called the *autumnal equinox.*

These four points, *viz.* two equinoctial and two solsticial, divide the ecliptic into the four quarters of the year.

Here let it be noted, that the twelve constellations, or signs in the heavens, obtained their names about two thousand years ago, or more; and at that time the stars that make up *aries,* or the *ram,* were in the place where the ecliptic ascending cuts the equator; but now the constellation *aries* is moved upward toward the place of *cancer* near thirty degrees; and so every constellation is moved forward in the ecliptic from the west toward the east near thirty degrees; so that the constellation, or stars that make up the sign *pisces* are now in the place where *aries* was, or where the ecliptic cuts the equator in the spring: And the constellation *virgo* is now where *libra* was, or where the ecliptic cuts the equator in autumn. So *gemini* is in the summer solstice where *cancer* was; and *sagittarius* in the winter solstice where *capricorn* was: And by this means the sun is got into the equinoxes in *pisces* and *virgo,* and is arrived at the solstices in *gemini* and *sagittarius, i. e.* when it is among those stars.

This alteration is called the *procession of the equinox, i. e.* of the equinoctial signs or stars, which seem to be gone forward, *i. e.* from west to east; but some call it the *retrocession of the equinox, i. e.* of the two equinoctial points, which seem to be gone backwards, *i. e.* from east to west. This comes to pass by some small variation of the situation of the axis of the earth with regard to the axis of the ecliptic, round which it moves by a conical motion*, and advances 40 seconds, or, almost a minute of a degree every year, which amounts to one whole degree in 72 years, and will fulfil a complete revolution in 25,920 years. This period some have called the *platonic year,* when some of the ancients fancied all things should return into the same state in which they now are.

Yet we call these equinoctical and solsticial points in the heaven, and all the parts of the ecliptic, by the same ancient names still in astronomy, and mark them still with the same characters, *viz.* ♈, ♉, ♊, ♋, ♌, &c. though the constellations themselves seem to be removed so much forward.

* The axis of the earth is supposed to be fastened at its middle in the centre, while both ends of it, or each of the poles in this motion describes a circle round each pole of the ecliptic, which is the base of the cone. The vertexes of each of these cones meet in the centre of the earth; and by this motion of the earth, all the fixed stars seem to be moved from their former places in circles parallel to the ecliptic.

XIII. and XIV. Here it may not be improper, in the last place, to mention the *poles of the ecliptic*, which are two other points marked generally in the celestial globe.

If there were an axis thrust through the centre of the globe just at right angles with the plane of the ecliptic, its ends or poles would be found in the two polar circles. So that a quarter of a circle, or 90 degrees, numbered directly or perpendicularly from the ecliptic line shews the poles of the ecliptic, and fixes these two points through which the two polar circles are drawn.

It is usual also in books of this kind to mention two great circles, called *colures*, drawn sometimes on the celestial globe through the poles of the world, one of which cutting the ecliptic in the two solsticial points is called the *solsticial colure;* the other cutting it in the equinoctial points is called the *equinoctial colure;* but they are not of much use for any common purposes or practices that relate to the globe.

I think it may not be amiss, before we proceed farther, to let the learner see a representation of all the foregoing circles and points on the globe, just as they stand in our horizon at London, and so far as they can be represented on a flat surface, and in straight lines.

Let the north pole be raised above the north part of the horizon $51\frac{1}{2}$ degrees which are numbered on the brazen meridian, then let the globe be placed at such a distance as to make the convexity insensible, and appear as a flat or plain surface, and let the eye of the spectator be just level and opposite to C, which represents the east point of the horizon: Then the globe and the circles on it will appear nearly as represented in *Figure* 3.

The large circle, divided by every 5 degrees, represents the meridian, the rest of the larger and the lesser circles are there named, together with the north and south poles. Z is the zenith of London, N the nadir, H the south point of the horizon, O the north point, C the east and west points, S the summer solstice, W the winter solstice, A the ecliptic's north pole, E the ecliptic's south pole. The two equinoctial points are represented by C, supposing one to be on this side, the other on the opposite side of the globe.

If you would have the two colures represented here in this figure, you must suppose the meridian to be the solsticial colure, and the axis of the world to represent the equinoctial colure.

Note, This representation or projection of the sphere in straight lines is usually called the *analemma*. See how to project it, or to erect this scheme, Sect. XX. Probl. XV. *Figure* 23.

SECTION V.

OF LONGITUDE AND LATITUDE ON THE EARTHLY GLOBE, AND OF DIFFERENT CLIMATES.

THE various parts of the earth and heavens bear various relations both to one another, and to these several points and circles, which have been described.

First, The earth shall be considered here.

Every part of the earth is supposed to have a meridian line passing over its zenith from north to south through the poles of the world. It is called the *meridian line* of that place, because the sun is on it at noon.

That meridian line which passes through Ferro, one of the Canary Islands, has been usually agreed upon by geographers as a first meridian, from which the rest are counted by the number of degrees on the equator. Others have placed their first meridian in Teneriffe, another of the Canary Islands, which is two degrees more to the east, but all this is matter of choice and custom, not of necessity.

The *longitude* of a place is its distance from the first meridian toward the east, measured by the degrees upon the equator. So the longitude of London is about 20 degrees, counting the first meridian at Ferro.

Note, In English globes or maps sometimes the longitude is computed from the meridian of London, in French maps from Paris, &c. for it being purely arbitrary where to fix a first meridian, mariners and map-makers determine this according to their inclination. When only the word longitude is mentioned in general, it always means the distance eastward; but sometimes we mention the longitude westward as well as eastward, *i. e.* from London, or Paris, &c. especially in maps of particular countries.

By the meridian circles on a map or globe the eye is directed to the true longitude of any place, according to the degrees marked on the equator: And upon this account the meridians are sometimes called *lines of longitude.*

The *latitude* of a place is its distance from the equator toward the north or south pole, measured by the degrees on the meridian. So the latitude of London is 51 degrees 32 minutes, that is, about $51\frac{1}{2}$.

A place is said to have north latitude or south latitude according as it lies toward the north pole or south pole in its distance from the equator. So London has $51\frac{1}{2}$ degrees of north latitude.

The *elevation of the pole* in any particular place is the distance of the pole above the horizon of that place measured by the degrees on the meridian, and is exactly equal to the latitude of that place: For the pole of the world or of the equator is just so far distant from the horizon as the zenith of the place (which is the pole of the horizon) is distant from the equator. For which reason the *latitude of the place* or the *elevation of the pole* are used promiscuously for the same thing.

The truth of this observation, *viz.* that the latitude of the place and the pole's elevation are equal, may be proved several ways: I will mention but these two. See *Figure* 4.

Let H C O be the horizon, Z the zenith, or the point over London, E Z the latitude of London $51\frac{1}{2}$, P O the elevation of the north pole above the horizon. Now that E Z is equal to P O is proved thus:

Demonstration I. The arch Z P added to E Z makes a quadrant, (for the pole is always at 90 degrees distance from the equator.) And the arch Z P added to P O makes a quadrant, (for the zenith is always at 90 degrees distance from the horizon.) Now if the arch Z P added either to E Z or to P O completes a quadrant, then E Z must be equal to P O.

Demonstration II. The latitude E Z must be the same with the pole's elevation P O: For * the complement of the latitude, or the height of the equator above the horizon

* *Note*, The complement of any arch or angle under 90 degrees denotes such a number of degrees as is sufficient to make up 90; as the complement of 50 degrees is 40 degrees, and the complement of $51\frac{1}{2}$ is $38\frac{1}{2}$ degrees. And so the complement of the sine or tangent of any arch is called the *co-sine* or *co-tangent:* So also, in astronomy and geography, we use the words *co-latitude, co-altitude, co-declination,* &c. for the complement of the latitude, altitude, or declination, of which words there will be more frequent use among the problems.

E H is equal to the complement of the pole's elevation P Z. I prove it thus: The equator and the pole standing at right angles, as E C P, they complete a quadrant, or include 90 degrees: Then if you take the quadrant E C P out of the semicircle, there remains P O the elevated pole, and E H the complement of the latitude, which complete another quadrant. Now if the complement of the latitude added to the elevation of the pole will make a quadrant, then the complement of the latitude is equal to the complement of the pole's elevation, and therefore the latitude is equal to the pole's elevation; for where the complements of any two arches are equal, the arches themselves must also be equal.

As every place is supposed to have its proper meridian or line of longitude, so every place has its proper line of latitude which is a parallel to the equator. By these parallels the eye is directed to the degree of the latitude of the place marked on the meridian, either on globes or maps.

By the longitude and latitude being given, you may find where to fix any place, or where to find it in any globe or map: For where those two supposed lines, *viz.* the line of longitude, and parallel of latitude cross each other, is the place enquired. So if you seek the longitude from Ferro, 20 degrees, and the latitude $51\frac{1}{2}$ degrees, they will shew the point where London stands.

Those parallels of latitude which are drawn at such distances from each other nearer and nearer to the poles, as determine the longest days and longest nights of the inhabitants to be half an hour longer or shorter, include so many distinct climates, which are proportionally hotter or colder according to their distance from the equator. Though, it must be owned, that we generally use the word climate in a more indeterminate sense, to signify a country lying nearer or farther from the equator, and consequently hotter or colder, without the precise idea of its longest day being just half an hour shorter or longer than in the next country to it.

The latitude is never counted beyond 90 degrees, because that is the distance from the equator to the pole: The longitude arises to any number of degrees under 360, because it is counted all round the globe.

If you travel never so far directly towards east or west, your latitude is still the same, but longitude alters. If directly towards north or south, your longitude is the same, but latitude alters. If you go obliquely, then you change both your longitude and latitude.

The latitude of a place, or the elevation of the pole above the horizon of that place, regards only the distance northward or southward, and is very easy to be determined by the sun or stars with certainty, as Sect. XX. Prob. VII. and IX. because, when they are upon the meridian they keep a regular and known distance from the horizon, as well as observe their certain and regular distances from the equator, and from the two poles, as shall be shewn hereafter: So that either by the sun or stars (when you travel northward or southward) it may be found precisely how much your latitude alters.

But it is exceedingly difficult to determine what is the longitude of a place, or the distance of any two places from each other eastward or westward by the sun or stars, because they are always moving round from east to west.

The longitude of a place has been therefore usually found out and determined by measuring the distance travelled on the earth or sea, from the west toward the east, supposing you know the longitude of the place whence you set out.

SECTION VI.

OF RIGHT ASCENSION, DECLINATION, AND HOUR CIRCLES.

Having considered what respect the parts of the earth bear to these artificial lines on the globe, we come, secondly, to survey the several relations that the parts of the heavens, the sun, or the stars, bear to these several imaginary points and artificial lines or circles.

The *right ascension* of the sun, or any star, is its distance from that meridian which passes through the point *aries*, counted toward the east, and measured on the equator; it is the same thing with longitude on the earthly globe.

The *hour* of the sun, or any star, is reckoned also by the divisions of the equator; but the hour differs from the right ascension chiefly in this, *viz.* The right ascension is reckoned from that meridian which passes through *aries;* the hour is reckoned on the earthly globe from that meridian which passes through the town or city required; or it is reckoned on the heavenly globe from that meridian which passes through the sun's place in the ecliptic, and which, when it is brought to the brazen meridian, represents noon that day.

There is also this difference. The right ascension is often computed by single degrees all round the equator, and proceeds to 360: The hour is counted by every 15 degrees from the meridian of noon, or of midnight, and proceeds in number to 12, and then begins again: Though sometimes the right ascension is computed by hours also, instead of degrees, but proceeds to 24. So the sun's right ascension the 10th of May is 59 degrees, or, as sometimes it is called, 3 hours and 56 minutes.

The same lines which are called lines of longitude or meridians on the earth are called hour circles on the heavenly globe, if they be drawn through the poles of the world at every 15 degrees on the equator, for then they will divide the 360 parts or degrees into 24 hours.

Note, As 15 degrees make one hour, so 15 minutes of a degree make one minute in time, and one whole degree makes four minutes in time.

Note, Degrees are marked sometimes with ^{d} or with a small circle $^{\circ}$, minutes of degrees with a dash $'$, seconds of minutes with a double dash $''$, hours with ^{h}, minutes of hours sometimes with ^{m} and sometimes a dash; seconds with a double dash.

By these meridians or hour-lines crossing the equator on the heavenly globe, the eye is directed to the true hour, or the degree of right ascension on the equator, though the sun or star may be far from the equator.

By these you may also compute on the earthly globe what hour it is at any place in the world, by having the true hour given at any other place, and by changing the degrees of their difference of longitude into hours.

But since several questions or problems that relate to the hour cannot be so commodiously resolved by these few meridians or hour-lines, because every place on the earth hath its proper meridian where the sun is at 12 o'clock, therefore there is a brass dial-plate fixed at the north-pole in the globe, whose 24 hours do exactly answer the 24 hour circles which might be drawn on the globe: Now the dial being fixed, and the pointer being movable, this answers all the purposes of having an infinite number of hour circles

drawn on the globe, and fitted to every spot on the heavens or the earth. For the pointer or index may be set to 12 o'clock, when the sun's true place in the heavens, or when any place on the earth is brought to the brass meridian, and thus the globe moving round with the index naturally represents and shews by the dial-plate the 24 hours of any day in the year, or in any particular town or city.

Note, The upper 12 o'clock is the hour of noon, the lower 12 is the midnight hour, when the globe is fixed for any particular latitude where there are days and nights.

The declination of the sun or stars is their distance from the equator toward the north or south pole, measured on the meridian; and it is the same thing with latitude on the earthly globe.

Note, The sun in the vernal or autumnal equinoxes, and the stars that are just on the equator, have no declination.

Parallels of declination are lines parallel to the equator, the same as the parallels of latitude on the earthly globe. In the heavens they may be supposed to be drawn through each degree of the meridian, and thus shew the declination of all the stars; or they may be drawn through every degree of the ecliptic, and thus represent the sun's path, every day in the year. These parallel lines also would lead the eye to the degree of the sun's or any particular star's declination marked on the meridian.

The declination is called north or south declination, according as the sun or star lies northward or southward from the equator.

Observe here, That as any place, town, or city on earth is found determined by the parallel of its latitude; crossing its line of longitude; so the proper place of the sun or star in the heavens is found and determined by the point where its parallel of declination crosses its meridian or line of right ascension; which indeed are but the self same things on both the globes, though astronomers have happened to give them different names.

Note, The sun's utmost declination northward in our summer is but $23\frac{1}{2}$ degrees; and it is just so much southward in our winter; for then he returns again: There the tropics are placed which describe the path of the sun when farthest from the equator, at midsummer, or midwinter: These two tropics are his parallels of declination on the longest and shortest days.

While the sun gains 90 degrees on the ecliptic, which is an oblique circle, in a quarter of a year, it gains but $23\frac{1}{2}$ degrees of direct distance from the equator measured on the meridian; this appears evident on the globe, and may be represented thus in *Figure 5*.

Let the semicircle ♈ P ♎ be the meridian of the northern hemisphere, the line ♈ C ♎ be the equator or the sun's path at *aries* and *libra*, the arch ♈ ♋ ♎ the ecliptic, the line T ♋ O the summer tropic, the line *a e* the sun's path when it enters *gemini* and *leo*, the line *n s* the sun's path when it enters *taurus* and *virgo;* then it will appear that in moving from ♈ to ♉ the sun gains 30 degrees on the ecliptic, in about a month, and at the same time 12 degrees of declination, *viz.* from ♈ to *n*. Then moving from ♉ to ♊ in a month more it gains 30 degrees on the ecliptic and $8\frac{1}{4}$ degrees of declination, *viz.* from *n* to *a*. Then again from ♊ to ♋ in a month more it gains 30 degrees on the ecliptic, and but $3\frac{1}{4}$ degrees of declination, *viz.* from *a* to T. I might also shew the same difference between its declination and its motion on the ecliptic in its descent from ♋ to ♌, ♍, and ♎.

By drawing another scheme of the same kind below the line ♈ C ♎, we might represent the sun's descent towards the winter solstice, and its return again to the spring; and thereby shew the same differences between the sun's declination and its motion on the ecliptic in the winter half-year as the present scheme shews in the summer half-year.

Hereby it is evident how it comes to pass, that the sun's declination alters near half a degree every day just about the equinoxes; but it scarce alters so much in ten or twelve days on each side of the solstices: And this shews the reason why the length of days and nights changes so fast in March and September, and so exceedingly slow in June and December: For according to the increase of the sun's declination in summer, its semidiurnal arc * will be larger, and consequently it must be so much longer before it comes to its full height at noon, and it stays so much longer above the horizon before it sets.

Thus while the sun's declination increases or decreases by slow degrees, the length of the days must increase and decrease but very slowly; and when the sun's declination increases and decreases swiftly, so also must the length of the days: All which are very naturally and easily represented by the globe.

SECTION VII.

OF LONGITUDE AND LATITUDE ON THE HEAVENLY GLOBE, AND OF THE NODES AND ECLIPSES OF THE PLANETS.

The longitude and latitude in astronomy are quite different things from longitude and latitude in geography, which is ready to create some confusion to learners.

The longitude of the sun or any star is its distance from the point *aries* eastward, measured on the ecliptic. This is a short way of describing it, and agrees perfectly to the sun: But in truth a star's longitude is its distance eastward from a great arch drawn perpendicular to the ecliptic through the point *aries*, and measured on the ecliptic.

We do not so usually talk of the sun's longitude, because we call it his place in the ecliptic, reckoning it no farther backward than from the beginning of the sign in which he is. So the 24th day of June, we say the sun is in the 3d degree of *cancer*, and not in the 93d degree of longitude.

The latitude of a star or planet is its distance from the ecliptic, measured by an arch, drawn through that star perpendicular to the ecliptic.

Longitude and latitude on the heavenly globe bear exactly the same relation to the ecliptic as they do on the earthly globe to the equator. As the equator is the line from which the latitude is counted, and on which the longitude is counted on the earthly globe, so the ecliptic is the line from which the latitude, and on which the longitude are counted on the heavenly globe.

And thus the lines of latitude in the heavenly globe are all supposed parallels to the ecliptic, and the lines of longitude cut the ecliptic at right angles, and all meet

* The diurnal arc is that part of the circle or parallel of declination which is above the horizon; and the half of that part is called the semidiurnal arc.

in the poles of the ecliptic, bearing the same relation to it as on the earthly globe they do to the equator.

The latitude of a star or planet is called northern or southern as it lies on the north or south side of the ecliptic.

The sun has no latitude, because it is always in the ecliptic. This relation of latitude therefore chiefly concerns the planets and stars.

The fixed stars, as well as the planets, have their various longitudes and latitudes; and their particular place in the heavens may be assigned and determined thereby, as well as by their right ascension and declination which I mentioned before; and astronomers use this method to fix exactly the place of a star.* But I think it is easier for a learner to find a star's place by its declination and right ascension; and the common astronomical problems seem to be solved more naturally and easily by this method.

It may be here mentioned, though it is before its proper place, that the several planets, *viz. saturn*, *jupiter*, *mars*, *venus*, *mercury*, and the *moon*, make their revolutions at very different distances from the earth, from the sun, and from one another; each having its distinct orbit or path nearer or farther from us. And as each of their orbits is at vastly different distances, so neither are they perfectly parallel to one another, nor to the ecliptic or yearly path of the sun.

Thence it follows that these planets have some more, some less latitude, because their orbits or paths differ some few degrees from the sun's path, and intersect or cross the ecliptic, at two opposite points in certain small angles of two, three, four, or five degrees, which points are called the *nodes*.

The node where any planet crosses the ecliptic ascending to the northward is called the *dragon's head*, and marked thus ☊. Where the planet crosses the ecliptic descending to the southward, it is called the *dragon's tail*, and marked thus ☋.

It is very difficult to represent the latitude of the planets in their different orbits either upon a globe, or upon a flat or plain surface; the best way that I know is to take two small hoops of different sizes, as in *Figure* 11, and thrust a straight wire *c o* through them both in the two opposite parts of their circumference: Then turn the innermost hoop, which may represent the path of the moon, so far aside or obliquely as to make an angle of $5\frac{1}{4}$ degrees with the outermost hoop, which represents the sun's path. Thus the two points *c* and *o*, or ☊ and ☋, where the wire joins the hoops, are the two nodes or the points of intersection.

This difference of orbits of the planets and their intersections, or nodes, may be represented also by two circular pieces of pasteboard, as in *Figure* 12. When the less, whose edge represents the moon's orbit, is put half way through a slit, A B, that is made in the diameter of the larger or the sun's orbit, and then brought up near to a parallel or level with the larger within $5\frac{1}{4}$ degrees. Thus the two nodes will be represented by A and B.

If the moon's path and the sun's were precisely the same, or parallel circles in the

* Astronomers know that not only the 12 contellations of the zodiac, but also all the fixed stars seem to move from the west toward the east about 50″ in a year, or one degree in 72 years, in circles parallel to the ecliptic. Therefore their declination is a little altered in 72 years' time, that being measured from the equator: But their latitude never alters, that being measured from the ecliptic: And upon this account astronomers use the latitude rather than the declination in their measures, because it abides the same for ever.

same plane, then at every new moon the sun would be eclipsed by the moon's coming between the earth and the sun; and at every full moon the moon would be eclipsed by the earth's coming between the sun and the moon. But since the planes of their orbits or paths are different, and make angles with each other, there cannot be eclipses but in or near the place where the planes of their orbits or paths intersect or cross each other.

In or very near these nodes, therefore, is the only place where the earth or moon can hide the sun or any part of it from each other, and cause an eclipse either total or partial: And for these reasons the orbit or path of the sun is called the ecliptic.

The eclipses of other planets, or of any part of the sun by their interposition, are so very inconsiderable as deserve not our present notice.

SECTION VIII.

OF ALTITUDE, AZIMUTH, AMPLITUDE, AND VARIOUS RISINGS AND SETTINGS OF THE SUN AND STARS.

The *altitude* of the sun or star is its height above the horizon, measured by the degrees on the quadrant of altitudes.

As the height of the sun at noon is called its *meridian altitude*, or its *culminating*, so the height of the sun in the east or west is sometimes called its *vertical altitude*.

The *quadrant of altitudes* is a thin label of brass, with a nut and screw at the end of it, whereby it is fastened to the meridian at the zenith of any place; now by bending this down to the horizon, you find the altitude of any star or point in the heavens, because the label is divided into 90 degrees, counting from the horizon upward.

Circles parallel to the horizon, supposed to be drawn round the globe, through every degree of the quadrant of altitudes less and less till they come to a point in the zenith, are called *parallels of altitude*, or sometimes in the old arabic name *almicantars*. But these can never be actually drawn on the globe, because the horizon and zenith are infinitely variable according to the different latitudes of places. In *Figure* 6, suppose Z to be the zenith, N the nadir, H R the horizon, and the straight lines *a b*, *f g*, *k m*, will represent the parallels of altitude.

Note, The sun being always highest on the meridian, or at noon, it descends in an arch towards the horizon in order to set, by the same degrees by which it ascended from the horizon after its rising. Stars and planets rise and set and come to the meridian at all different hours of the day or night, according to the various seasons of the year, or according to the signs in which the planets are.

As the word *altitude* is used to signify the height of the sun or star above the horizon, so the *depression* of the sun or star is its distance from or below the horizon.

The *azimuth* of the sun or star is its distance from any of the four cardinal points, east, west, north, and south, measured by the degrees of the horizon.

Note, When we speak of the sun's azimuth in general, we usually mean his distance from the south: But when his distance from the north, east, or west, is intended, we say, his azimuth from the north, the east, or the west.

Great circles cutting every degree of the horizon at right angles, and meeting in the zenith and nadir, are called *azimuthal* or *vertical circles*. They direct the eye to the point of the sun or star's azimuth on the horizon, though the sun or star may be far above or below the horizon.

Note, Vertical circles are the same with regard to the zenith, nadir, and the horizon, as meridians or hour circles are with regard to the two poles of the world and the equator. But these vertical circles can never be actually drawn on a globe, because the zenith, nadir, and horizon are ever variable. See them represented, *Figure* 6, by the lines Z H N, Z *a* N, Z *e* N, &c. supposing H R to be the horizon.

Note, The quadrant of altitudes being moveable when one end of it is fastened at the zenith, the graduated edge of it may be laid over the place of the sun or star, and brought down to the horizon; then it represents any azimuth or vertical circle, in which the sun or star is; and thus it shews the degree of its azimuth on the horizon.

Note, The azimuth of the sun or star from the east or west points of the horizon at its rising or setting, is called its *amplitude*.

Note, The sun is always in the south at noon, or 12 o'clock, and in the north at midnight, *viz.* in Europe and all places on this side of the equator. But it is not at the east or west at six o'clock any other day in the year besides the two equinoctial days, as will easily appear in an oblique position of the sphere, of which see the next Section, and especially in the last Section, where the analemma shall be more fully described.

Yet the relation which the parallels of altitude bear to the vertical circles, and which these vertical or azimuthal circles bear to the meridians or hour circles, may be represented to the eye in *Figures* 6 and 7.

In *Figure* 6, suppose the outermost circle be the meridian, H R, the horizon, Z the zenith, N the nadir; then *d b*, *f g*, *k m*, will be parallels of altitude: And Z *a* N, Z *e* N, Z *o* N, Z C N, &c. will be vertical circles, or circles of azimuth crossing the others at right angles.

Thus Z C N is the vertical circle of east or west. And in this scheme *s a* or *f* H will be the arch of the altitude of the star *s*, and H *a* will be its azimuth from the meridian; and C *a* will be its azimuth from the east or west.

But if the line H R be supposed to represent the equator, then Z and N will be the two poles of the world, and then *d b*, *f g*, &c. will be parallels of latitude on earth, or parallels of declination in the heavens. Then also the arches Z H N, Z *a* N, Z *e* N, Z *o* N, Z C N will be meridians, or lines of longitude on earth, and hour circles in the heavens.

In *Figure* 7, let the utmost circle be the meridian, H R the horizon, Z the zenith, N the nadir, E Q the equator, P L the axis of the world, or rather the two poles, north and south; then Z H N, Z *a* N, Z *e* N, Z C N will be circles of azimuth: P E L, P *o* L, P *u* L, P C L, &c. will be hour circles.

And in this position the star *s* will have T *s*, i. e. eqnal to *e o*, for its hour from noon or the meridian; but its azimuth from noon or the south or meridian will be H *e*. Or if you reckon its azimuth from the east or west vertical, which is Z C N, it will be found to be C *e*, while its hour, reckoned from P 6 C L, which is the six o'clock hour line, will be found to be 6 *s* or C *o*.

Thus it will appear how the hour of the sun differs from its azimuth, and that both

Fig. 2.

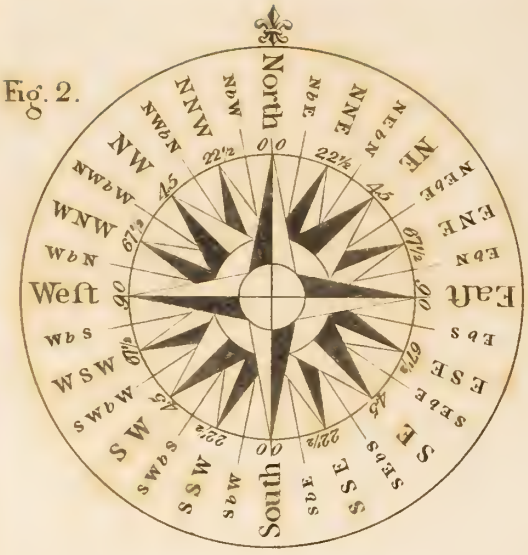


Fig. 3

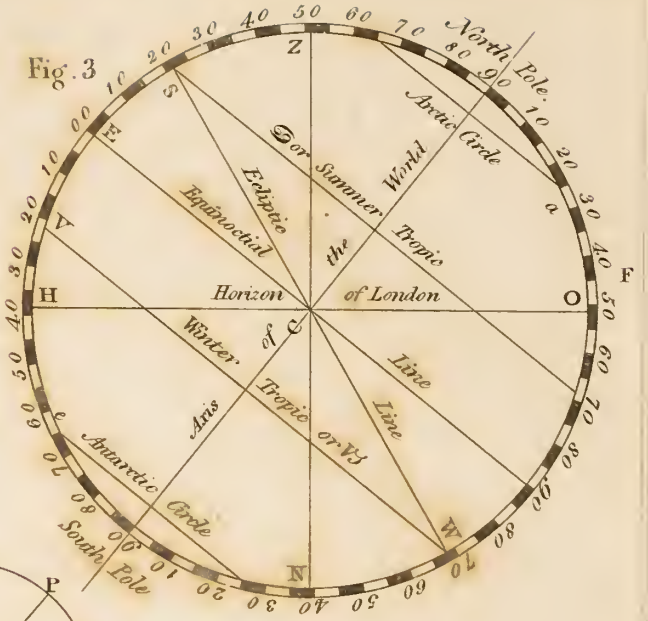


Fig. 4.

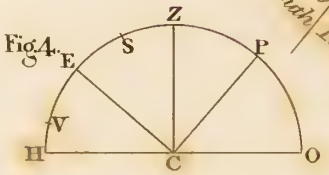


Fig. 1.

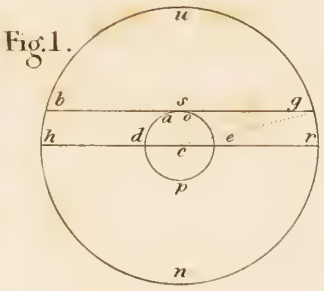


Fig. 5.

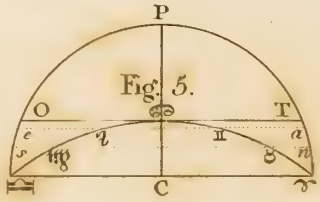


Fig. 6

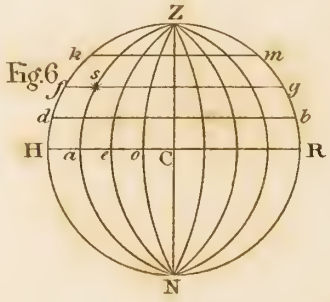


Fig. 9.

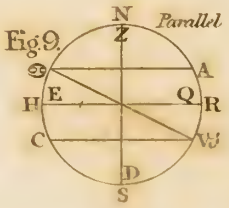


Fig. 7.

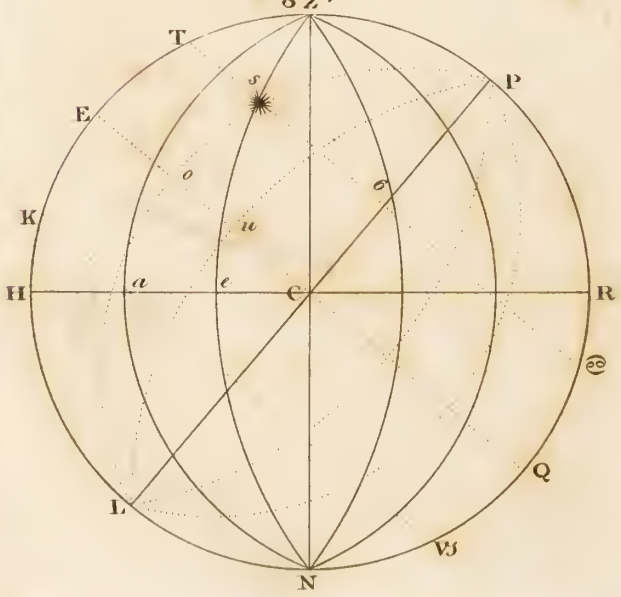


Fig. 8.

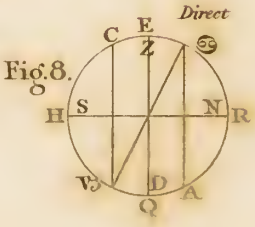


Fig. 10.

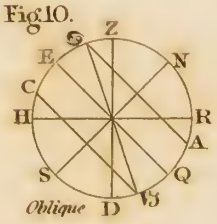


Fig. 11.

Fig. 12

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of them are numbered or counted from the meridian P Z E H L N; yet they do not by any means keep equal pace with one another, one being numbered along the equator E Q, the other numbered along the horizon H R.

Thus you see most evidently that if you suppose the sun ☉ to be in the tropic of cancer, represented by the line T ♋, the difference between the hour and azimuth will appear to be very great; and that the sun's azimuth from noon H *e* increases a great deal faster than his hour T *s* doth in the middle of summer. And if another line K ♑ were drawn to represent the tropic of capricorn, the sun's azimuth from noon will appear to increase a great deal slower than his hours do in the middle of winter.

I think it should not utterly to be omitted here what is mentioned in almost all writings of this kind, *viz.* that a star is said to rise or set *cosmically* when it rises or sets at sun-rising.

It is said to rise or set *achronically* if it rise or set at sun-setting.

A star is said to rise *heliacally* when it is just come to such a distance from the sun as that it is no longer hid by the sun-beams. And it is said to set heliacally when the sun approaches so near to it as that it begins to disappear from our sight being hid by the beams of the sun.

The fixed stars and the three superior planets, *mars, jupiter,* and *saturn,* rise heliacally in the morning, but the moon in the evening; for it is in the evening the new moon first appears, coming from her conjunction with the sun.

Note, This sort of rising and setting of the stars is also called *poetical;* because the ancient poets frequently mention it.

SECTION IX.

OF THE INHABITANTS OF THE EARTH ACCORDING TO THE POSITIONS OF THE SPHERE, THE ZONES, &c.

In order to make the doctrine of the sphere or globe yet more plain and intelligible, let us consider the inhabitants of the several parts of the world, who may be distinguished three ways, First, According to the various positions of the globe: Secondly, According to the five zones: Thirdly, In relation to one another.

First, Let us consider them according to the various positions of the globe or sphere, direct, parallel, or oblique.

These three positions of the sphere are represented in *Figures* 8, 9, 10, in each of which the utmost circle is the meridian, H R is the horizon, E Q the equator, ♋ ♑ the ecliptic, S N the axis of the world, N the north pole, S the south, Z D the vertical circle of east and west, Z the zenith, D the nadir, ♋ A the tropic of cancer, C ♑ the tropic of capricorn. The various positions of these lines or circles will appear by the following descriptions:

I. A *direct* or *right sphere, Figure* 8, is when the poles of the world are in the horizon, and the equator passes through the zenith: This is the case of those who live directly under the line or equator.

Here the inhabitants have no latitude, no elevation of the pole: The north or south poles being in the horizon they may very nearly see them both.

All the stars do once in twenty-four hours rise and set with them, and all at right angles with the horizon.

The sun also, in whatsoever parallel of declination he is, rises and sets at right angles with the horizon; their days and nights therefore are always equal, because the horizon exactly cuts the sun's diurnal circles in halves.

They have two summers every year, *viz.* when the sun is in or near the equinoctial points for then he is just over their heads at noon, and darts his strongest beams. And they have two winters, *viz.* when the sun is in or near the tropics of cancer and capricorn; for then the sun is farthest distant from them, though even then it is nearer than it is to us in England at midsummer.

II. A *parallel sphere*, *Figure* 9, is where the poles of the world are in the zenith and nadir: And the equator is in the horizon.

Now if there were any inhabitants thus directly under the north and south poles, they would have only one day of six months long, and one night of six months, in a whole year, according as the sun is on this or the other side of the equator; for the sun moving slowly in the ecliptic on the north side of the equator half a year, would be all that time above the horizon to the inhabitants at the north pole, though it went round them daily: And the sun moving in the ecliptic on the south side of the equator half a year, would be below their horizon all that time. The same might be said concerning the inhabitants of the south pole.

The two equinoctial days, or when the sun is in the points *aries* or *libra*, the day and night are equal all the world over; and this is true in a sense to those who live under the poles; for the centre of the sun is in their horizon. Thus half the sun is above their horizon, and half below it for 24 hours together.

Thus, though the polar inhabitants begin to lose the sun at the autumnal equinox, they are not in utter darkness all the time of the sun's absence: For the twilight lasts till the sun is 18 degrees below their horizon, and that is till he has 18 degrees of declination. The inhabitants of the north pole are therefore without the twilight only from the 13th of November till the 29th of January.

Let it be noted also, that the refraction of the rays through the thick air or atmosphere makes the sun appear above their horizon several days sooner, and disappear several days later, than otherwise it would do. It may be added in favour of their habitation too, that the moon when she is brightest, *viz.* from the first quarter to the last, does not set during their middle of winter: For in that part of her month she is most opposite to the sun, and is therefore in that part of the heavens which is most distant from the sun while he never rises.

The parallels of the sun's declination in this position of the sphere are all parallel to the horizon; and are the same with the parallels of his altitude, and therefore his highest altitude with them can never exceed $23\frac{1}{2}$ degrees.

The stars that they could see would be always the same, making perpetual revolutions round them, and never set nor rise, nor be higher nor lower. And the planets during half their periods will be above their horizon, as *saturn* 15 years, *jupiter* 6, *mars* 1, &c.

III. An *oblique sphere*, *Figure* 10, is where the latitude or elevation of the pole is at any number of degrees less than 90. Therefore all the inhabitants of the earth, except under the equator and the poles, have an oblique sphere.

Here the equator and all the parallels of declination cut the horizon obliquely, therefore the sun and stars always rise and set at oblique angles with the horizon.

As one pole of the world is always in their view, and the other is never seen, so there are some stars which never set, and others which never rise in their horizon.

Their days and nights are of very different lengths according to the different declination of the sun in the several seasons of the year.

In this oblique position of the sphere, astronomers sometimes talk of the oblique ascension of the sun or stars; and in order to obtain a clearer idea of it, let us again consider the right ascension, which is the sun or star's distance from that meridian, which passes through the point *aries*, measured on the equator.

Or it may be expressed thus: The right ascension is that degree of the equator which comes to the meridian together with the sun or star, considered in its distance from the point *aries*.

But the oblique ascension is that degree of the equator which in an oblique sphere rises together with the sun or star considered in its distance from the point *aries*.

Note, That in a right or direct sphere all the heavenly bodies can only have right ascension, and no oblique ascension; because the same point or degree of the equator that rises with them comes also to the meridian with them: But in an oblique sphere there is sometimes a great deal of difference between the point that rises with them and the point that comes with them to the meridian.

Now the difference between the right ascension of the sun or star, and its oblique ascension is called the ascensional difference.

Note, Concerning the stars in the equator, that their right and oblique ascension are equal: Therefore the sun in the equinoxes rising at six and setting at six has no ascensional difference: But as he goes onward from the equator toward the winter solstice, he rises after six; and as he goes toward the summer he rises before six; and the distance of his rising or setting from six o'clock is called the ascensional difference.

And perhaps it is sufficient, as well as much easier, for a learner to remember that the time of the sun or star's rising or setting before or after six o'clock is called by astronomers the ascensional difference, without taking any notice at all of the oblique ascension, which is neither so easy to be apprehended or remembered.

The *second* distinction of the inhabitants of the earth may be made according to the *five zones* which they inhabit; this was an ancient division of the globe.

The *zones* are broad circles, five of which cover or fill up the globe. There are two temperate, two frigid or cold, and one torrid or hot.

The *torrid* or *burning zone* is all the space that lies between the two tropics; it was once counted uninhabitable, because of excessive heat, being so near the sun; but later discoveries have found many and great nations inhabiting those parts which contain the greatest part of Africa and of South America.

The two *frigid* or *cold zones* are those spaces which are included within the two polar circles, with the pole in the centre, at great distance from the sun, scarcely habitable by reason of the cold. There lie Greenland and Lapland toward the north pole. The south pole and polar regions are undiscovered.

The two *temperate zones* are those spaces that lie on either side of the globe between the tropics and the polar circles, where the sun gives a moderate heat, and makes those parts most convenient for the habitation of men. All Europe, and the greatest part of Asia, and North America, lie in the north temperate zone.

Note, That the torrid zone lying between the two tropics, every place in it has the sun in the zenith, or exactly over their heads once or twice in every year.

Those who live under the tropic of cancer have their winter when the sun is in *capricorn*. Those who live under the tropic of capricorn have their winter when the sun is in *cancer*. Those who live under the equator have, as I said before, two winters in the year; though indeed there is scarcely any season can be called winter within the limits of the torrid zone.

Those who live just within the borders of the two frigid zones, lose the sun for twenty-four hours together at midwinter, when the sun is in the contrary tropic: And those places that are nearer and nearer to the poles lose the sun for two, three, four, five, six days, for whole weeks or months together at their winter, or when the sun is near the contrary tropic.

What is said concerning the loss of light a whole day or week or month at winter in either of the frozen zones, must be also said concerning the gaining a whole day or week or month of daylight at their summer; and those parts of the year are all darkness in the northern frigid zone, which are all daylight in the southern.

Thus as you go farther northward or southward the continuance of the sun above the horizon grows longer in their summer; and the utter absence of it below the horizon grows longer in their winter; till you come to those inhabitants, if any such there be, who live under the pole, for these have half the year night, and half the year day, as I said before concerning the parallel sphere.

In the two temperate zones, as also in the torrid zone, there are never quite 24 hours either of day or of night together; but when the sun is in the equator, all days and nights are equal; Afterwards their days gradually increase till their longest day in summer, and gradually decrease till their shortest day in winter: Though those who live on the borders of the polar circles or the frigid zones have their 22d of June, or longest day in summer near 24 hours; and their 22d of December, or shortest day in winter, but just allows the sun to peep a moment above the horizon, so that their night is very near 24 hours long.

Thirdly, The inhabitants of the earth may also be divided into three sorts in respect of their geographical relation to one another, and they are called the *periœci*, the *antœci*, and *antipodes*.

I. The *periœci* live under the same parallel of latitude on the same side of the globe, but differ in longitude from east to west 180 degrees, or just half the globe. These have their summer and winter at the same times with one another, but day and night just at contrary times. *Note*, Those who live under the poles have no periœci.

II. The *antœci* live under the same meridian or line of longitude, and have the same degree of latitude too, but on contrary sides of the equator, one to the north, the other to the south. These have day and night exactly at the same time, but summer and winter contrary to each other. *Note*, Those who live under the equator have no antœci.

III. The *antipodes* have, if I may so express it, the properties of the *antœci* and *periœci* joined together, for they live on contrary sides of the equator, though in the same latitude or distance from it; and their meridian or line of longitude is 180 degrees or half the globe different. A line passing through the centre of the earth from the feet of

the one would reach the feet of the other. They dwell at the full distance of half the globe, and have day and night, summer and winter, at contrary times.

In each of the three last Figures, *viz.* 8, 9, and 10, you may see these distinctions of the earth's inhabitants exactly represented. ♋ A are *periœci*, so are C ♑. But ♋ C or A ♑ are *antœci.* ♋ ♑, or A C, or N S, or H R, or E Q, are all antipodes to each other.

The *amphiscii*, *heteroscii*, and *ascii*, which are only greek names invented to tell how the sun casts the shadows of the several inhabitants of the world, are not worth our present notice.

SECTION X.

THE NATURAL DESCRIPTION OF THE EARTH AND WATERS ON THE TERRESTRIAL GLOBE.

THE earth may be divided into its *natural* or its *political* parts. The one distinction is made by the God of nature who created it: The other, by men who inhabit it.

The globe or surface of earth on which we dwell is made up *naturally* of two parts, *land* and *water;* and therefore it is called the *terraqueous globe.* Each of these elements have their various parts and subdivisions, which are as variously described on artificial globes or maps.

The land is called either an *island*, a *continent*, a *peninsula*, an *isthmus*, a *promontory*, or a *coast.* See a plain description of all these, *Figure* 8.

An *island* is a country or portion of land, compassed about with sea or other water, as Great Britain, Ireland in the British Seas; Sicily, Crete, Cyprus, &c. in the Mediterranean Sea; the Isles of Wight, of Anglesey, of Man, near England. There are also islands in rivers.

A *continent*, properly so called, is a large quantity of land, in which many great countries are joined together, and not separated from each other by the sea, such are Europe, Asia, Africa. This is sometimes called the main-land.

A *peninsula* is a part of land almost encompassed with water, or which is almost an island: Such is the Morea which joins to Greece, such is Denmark as joining to Germany, and Taurica Chersonesus joining to Little Tartary near Muscovy; and, indeed, Africa is but a large peninsula joining to Asia.

An *isthmus* is a narrow neck of land between two seas, joining a peninsula to the continent, as the isthmus of Darien or Panama which joins North and South America: The isthmus of Corinth which joins the Morea to Greece: The isthmus of Suez which joins Africa to Asia.

A *promontory* is a hill or point of land stretching out into the sea: It is often called a *cape*, such is the Cape of Good Hope in the south of Africa; the Land's End and the Lizard Point are two capes at the west of England; Cape Finisterre on the West of Spain, &c.

A *coast* or *shore* is all that land that borders upon the sea, whether it be in islands or continents: Whence it comes to pass that sailing near the shore is called *coasting.* That

part of the land which is far distant from the sea is called the *inland country:* These are the divisions of the land.

The water is divided into *rivers* or *seas.*

A *river* is a stream of water which has usually its beginning from a small spring or fountain whence it flows continually without intermission, and empties itself into some sea. But the word *sea* implies a larger quantity of water, and is distinguished into *lakes, gulfs, bays, creeks, straits,* or the *ocean.*

The *ocean* or the main-sea is a vast spreading collection of water, which is not divided or separated by lands running between: Such is the Atlantic or Western Ocean between Europe and America: The Eastern or the Indian Ocean in the East Indies: The Pacific Ocean or South Sea, on the west side of America, &c.

Note, The various parts of this ocean or main-sea that border upon the land are called by the names of the lands which lie next to it: So the British Sea, the Irish Sea, the Ethiopean Sea, the French and Spanish Seas.

A *lake* is a large place of water enclosed all round with land, and having not any visible and open communication with the sea: Such are the Caspian Sea or Lake in Asia; the Lake Zaire in Africa, as some maps describe, and many others there are in Europe and America, and especially in Sweden and Finland, and on the west of New England: Such also is the Lake or Sea of Tiberias in the land of Canaan, and the Dead Sea there, which we read of in Scripture.

A *gulf* is a part of the sea that is almost encompassed with land, or that runs up a great way into the land.

If this be very large it is rather called an *inland sea:* Such is the Baltic Sea in Sweden, and the Euxine Sea between Europe and Asia; the Ægean Sea between Greece and Lesser Asia; and the Mediterranean Sea between Europe and Africa, which is often in the Old Testament called the *Great Sea.*

If it be a less part of the sea, thus almost enclosed between land, then it is more usually called a *gulf* or *bay:* Such is the Gulf of Venice between Italy and Dalmatia: The Arabian Gulf or the Red Sea between Asia and Africa: The Persian Gulf between Arabia and Persia: The Gulf or Bay of Finland in the Baltic Sea; and the Bay of Biscay between France and Spain.

If it be but a very small part, or as it were an arm of the sea that runs but a few miles between the land, it is called a *creek,* a *haven,* a *station,* or a *road* for ships; as Milford Haven in Wales; Southampton Haven in Hampshire, and many more in every maritime country.

A *strait* is a narrow part of the ocean lying between two shores, whereby two seas are joined together, as the Sound which is the passage into the Baltic Sea between Denmark and Sweden: The Hellespont and Bosphorus, which are two passages into the Euxine Sea between Romania and the Lesser Asia: The Straits of Dover between the British Channel and the German Sea: and the Straits of Gibraltar between the Atlantic and the Mediterranean, though the whole Mediterranean Sea is sometimes called the Straits.

If we compare the various parts of the land with those of the water, there is a pretty analogy or resemblance of one to the other. The description of a *continent* resembles that of the *ocean,* the one is a vast tract of land as the other is of water. An *island* encompassed with water, resembles a *lake* encompassed with land. A *peninsula* of land

is like a *gulf* or *inland sea*. A *promontory* or *cape* at land is like a *bay* or *creek* at sea; and an *isthmus*, whereby two lands are joined, has the same relation to other parts of the earth, as a *strait* has to the sea or ocean.

Let us now take notice by what figures the various parts of land or water are described in a globe or map, and in what manner they are represented. See *Figure* 13.

Sea is generally left as an empty space, except where there are rocks, sands, or shelves, currents of water or wind, described.

Rocks are sometimes made like little pointed things sticking up sharp in the sea. *Sands* or *Shelves* are denoted by a great heap of little points placed in the shape of those sands, as they have been found to lie in the ocean by sounding or fathoming the depths. *Currents of water* are described by several long crooked parallel strokes imitating a current. The *course of winds* is represented by the heads of arrows pointing to that coast toward which the wind blows.

The *land* is divided or distinguished from the sea by a thick shadow made of short small strokes to represent the *shores* or *coasts*, whether of islands or continents, &c. and it is usually filled with names of kingdoms, provinces, cities, towns, mountains, forests, rivers, &c. which are described in this manner, *viz.*

Kingdoms or *provinces* are divided from one another by a row of single points, and they are often painted or stained with distinct colours. *Cities* or *great towns* are made like little houses with a small circle in the middle of them. *Lesser towns* or *villages* are marked only by such a small circle. *Mountains* are imitated in the form of little rising hillocs. *Forests* are represented by a collection of little trees. *Small rivers* are described by a single, crooked, waving line; and *larger rivers* by such a waving or curling double line made strong and black. The mouths of large rivers, where they empty themselves into the sea, are represented sometimes as currents of water, by several parallel crooked lines.

I should add this also, That in terrestrial globes you find the mariner's compass figured in several parts, and the lines of it are drawn out to a great length toward all parts of the world, on purpose to shew how any part of the earth or sea stands situated with regard to any other part; and this is called its bearing, by which you may know what places bear east, west, north, or south from the place where you are, or at what other intermediate points of the compass they lie. The north is generally described by a flower-de-luce, and the east frequently by a cross.

Globes are generally so formed as to have the north pole just standing before the face: Then the east is at the right hand, and the west at the left: And thus usually the names and words are written to be read from the west to the east. This is also observed in large maps, and it should be the same in small ones; for when the map of a country is drawn in any other form, so that the north does not lie just before us, and the east to our right-hand, it gives great confusion to the learner, and sometimes confounds the eye and imagination even of persons skilled in geography.

SECTION XI.

OF MAPS AND SEA CHARTS.

THOUGH nothing can represent the heavens or the earth in their natural appearance so exactly as a globe, yet the two hemispheres either of the heavens or of the earth may be represented upon a flat or plain surface, which are generally called *projections of the sphere.*

If you suppose a globe to be cut in halves just at the equator, and each hemisphere represented on a plane, it is called a projection of the globe upon the plane of the equator. Then the equinoctial line will be the circumference, and the two poles of the world will be the centres of those two projections, and all the meridian lines will be so many straight lines or semidiameters meeting in the centre. This is the most common method of representing the celestial globe and the stars.

If the globe be cut asunder at the horizon of any particular place and thus represented on a plane, it is called the projection on the plane of the horizon. Then the zenith and nadir will be the centres of those projections, and the horizon is the circumference. The two poles will be placed at such a distance from the circumference as the pole of the world is elevated above the horizon of that place; and the meridians will be represented as curved lines meeting in the pole point, excepting only that meridian that passes through the zenith which is always a right line. This is a more uncommon projection of the sphere, though it is much used in dialling.

The most usual way of describing the earthly globe on a plane, or a map, is to suppose the globe cut in halves about the first meridian at the island of Ferro or Teneriffe. This is a projection on the plane of the meridian: Then the first meridian will determine the circumference: The pole points will stand in the upper and lower parts of that circle, and the other meridians will be curve lines meeting in the pole points, except that which passes through the centre of the projection, which is a right line.

Here the equator will be a straight line or diameter crossing all the meridians at right angles, and at equal distances from the two poles.

Here the two tropics of *cancer* and *capricorn* are drawn at their proper distances of $23\frac{1}{2}$ degrees from the equator; and the two polar circles at the same distance from the poles.

In this projection the ecliptic is sometimes a straight line cutting the middle of the equator obliquely in each hemisphere, and ending where the two tropics meet the meridian: But sometimes the ecliptic is drawn as a curve line or an arch, beginning where the equator meets the meridian, and carried upward just to touch the tropic of cancer in one hemisphere, and downward to touch the tropic of capricorn in the other.

It is in this form the maps of the world are generally drawn in two large hemispheres.

Note here, That it is impossible to represent a spherical body exactly in its due proportion upon a plane; and therefore the artificial meridians or lines of longitude, parallels of latitude, &c. are placed at such different distances by certain rules of art, and the degrees marked on them are often unequal; but so drawn as may most com-

modiously represent the situation of the several parts of the earth with regard to one another.

The meridian or circumference of these circles is divided into four quarters, and each marked with 90 degrees beginning from the equator and proceeding toward the poles. These figures or numbers shew the latitude of every place on the earth, or its distance from the equator, and at every ten degrees there is a parallel of latitude drawn on purpose to guide and direct the eye in seeking the latitude of any place.

The equator of each hemisphere is divided into 180 parts, which makes 360 in the whole: And the several meridians or lines of longitude, cutting the equator at every ten degrees, guide and direct the eye to find the longitude of any place required.

As the equator, the several lines of longitude, latitude, &c. cannot be represented on a plane exactly as they are on a globe; so neither can the several parts of the world, kingdoms, provinces, islands, and seas, be represented in a map exactly in the same proportion as they stand on a globe. But as the divisions of degrees in a map are bigger or less, so the parts of the land and sea are represented there bigger or less in a most exact proportion to those lines of longitude and latitude among which they are placed.

Therefore, though the length, or breadth, or distance of places on a map of the world cannot be measured by a pair of compasses as they may be on a globe, yet you may count the number of degrees to which such lengths, breadths, or distances correspond, and thereby you may compute their real dimensions; though not always so well as on a globe; of which hereafter.

Thus much shall suffice concerning maps that represent the whole world, or the globe of earth and water. Let us next consider those maps which represent particular parts of the world, kingdoms or provinces; these are generally drawn in a large square, and are to be considered as parts of a projection on the plane of the meridian.

From the top to or toward the bottom of the square are drawn meridians or lines of longitude; and the number of degrees of longitude are divided and marked on the upper and undermost line of the square.

From side to side are drawn parallels of latitude, and the degrees of latitude are marked on the two side lines.

Thus you may easily find on a map what is the longitude or latitude of any place given, or you may find the point where any town stands or should stand, when the true longitude and latitude of it are given.

Note, In such maps of particular countries the longitude is not always reckoned from the first meridian, as Ferro or Teneriffe, but oftentimes it is reckoned from the chief city of that kingdom, which is described in the map, as I have intimated before.

Observe farther, That though in globes and maps of the whole world the longitude is reckoned from the west toward the east, yet in smaller maps it is often reckoned both ways, as Bristol is $2\frac{1}{2}$ degrees of western longitude from London, Amsterdam has near five degrees of eastern longitude.

Note also, That when a small country is represented in a large map, the lines of longitude and parallels of latitude are drawn not merely at every ten degrees, as in the globe, but sometimes at every five degrees, and sometimes at every single degree.

Let it be observed also, in large maps, that describe any particular country or province, as a single or double crooked waving line signifies a river when it is made

strong and black; so a public road is described by a single or a double line drawn from town to town, not quite so curled nor so strong as a river is, but straight or winding as the road itself happens. And where the roads lie through a broad plain or great common without houses or hedges, they are sometimes described by a double row of points.

As villages and smaller towns are described by a little circle or small round o in maps of larger countries, where the cities are represented by the figure of a house or two with a spire or steeple; so in maps of smaller countries or provinces the little towns and villages are described by the figure of a house or two, and great towns or cities are marked like several buildings put together in prospect, or else the naked plan of those very towns or cities is drawn there and distinguished according to their streets.

I proceed now to consider sea-charts.

As maps are drawn to describe particular countries by land, so a description of coasts or shores, and of the seas for the use of mariners, is called a sea-chart, and it differs from a map chiefly in these particulars:

I. A map of the land is full of names and marks describing all the towns, countries, rivers, mountains, &c. but in a sea-chart there are seldom any parts of the land marked or described, besides the coasts or shores and the sea-ports, the towns or cities that border upon the sea, and the mouths of rivers.

II. In a map the sea is left as an empty space, except where the lines of longitude and latitude, &c. are placed: But in sea-charts all the shoals or sands, and shallow waters, are marked exactly according to their shape, as they have been found to lie in the sea by sounding the depth in every part of them.

III. In sea-charts, the meridians are often drawn in straight and parallel lines, and the lines of latitude are also straight parallels crossing the meridians at right angles. This is called Mercator's projection; and the points of the compass are frequently repeated and extended through the whole chart in a multitude of crossing lines*, that wheresoever the mariner is upon the sea he may know toward what point of the compass he must steer, or direct his vessel to carry it toward any particular port; and that we may be able to see with one cast of an eye the various bearings of any port, coast, island, cape, &c. toward each other.

IV. The sea is also filled in sea-charts with various numbers or figures which denote the depth of water, and shew how many fathom deep the sea is in those places where the number stands; these are called soundings.

V. In sea-charts there is not such care taken to place the north parts of the world always directly upright and before the face of the reader; but the coasts and countries are usually described in such a position as may afford the fittest room to bring in the greatest variety of shores and seas within the compass of the same chart, whether the east, or west, or north, be placed directly before the reader.

Here let it be noted, that as *geography* taken strictly and properly is a description of land, so a description of water or sea is called *hydrography*; and as those who describe the land on maps are properly called *geographers*, so those who draw the sea-charts are often called *hydrographers*.

* See Note, Problem X. Section XIX.

SECTION XII.

THE POLITICAL DIVISIONS OF THE EARTH REPRESENTED ON THE GLOBE.

Thus we have finished the natural divisions of the surface of the earth; we come now to consider how it is divided *politically* by men who inhabit it.

In this sense it is distinguished into four quarters, into empires, kingdoms, states, commonwealths, principalities, dukedoms, provinces, counties, cities, towns, villages, &c.

The earth is first divided into four chief parts or quarters, which are called *Europe*, *Asia*, *Africa*, and *America*.

Europe is divided from Africa and bounded on the south side by the Mediterranean Sea. On its eastern side it is divided from Asia by a line drawn on the east side of Candia, or Crete, passing up the Ægean Sea, and through the Propontis into the Euxine or Black Sea, and from thence, through the Sea of Zabiaque, by the river Don or Tanais, and thence through Muscovy, as some will have it, to the river Oby, running into the Northern Ocean. It is also bounded on the west side by the Western or Atlantic Ocean.

Asia is also bounded on the north by the Northern Frozen Seas: On the south by the Indian Ocean: On the east it includes China and the Oriental Islands: But on the north-east its bounds are unknown, for travellers have not yet been able to determine whether those eastern parts of Great Tartary may not be joined to some unknown parts of North America.

Africa is a large peninsula joining to Asia by a little neck of land at Egypt, bounded on the north by the Mediterranean Sea: On the west by the Atlantic and Ethiopic Oceans: On the north-east by the Red Sea; and on the south and east by the Southern and Indian Oceans.

America was unknown to the ancients till found out by Christopher Columbus, a little above two hundred years ago. It is called in general the West Indies. It lies almost three thousand miles to the westward from Europe and Africa on the other side of the Atlantic and Ethiopic Seas: It is made up of two large continents, divided by a narrow neck of land into two parts; the one is called North America or Mexicana, the other South America or Peruana.

Let us treat briefly of each of these in their order.

SECTION XIII.

OF EUROPE AND ITS SEVERAL COUNTRIES AND KINGDOMS.

The chief countries of which Europe is composed may be distinguished into the *northern*, the *middle*, and the *southern parts*.

I. The *northern parts* are the British Isles, Denmark, Norway, Sweden, Muscovy, and Lapland.

The British Isles are Great Britain and Ireland. Great Britain contains the two kingdoms of England and Scotland, which were lately united into one. The chief city of England is London, and Edinburgh is the chief in Scotland, as Dublin is in

Ireland. *Note*, That Wales is reckoned a part of England, though they speak a different language.

Denmark is a small kingdom on the north of Germany, made up of one peninsula, and several islands in the Baltic Sea; its chief city is Copenhagen, which stands in the largest of those islands.

The kingdom of Norway, which lies all along bordering on the west of Sweden, has its chief town Drontheim; this, together with the isle of Iceland far distant in the Northern Sea, is under the government of the king of Denmark.

Sweden is one of the northern kingdoms which almost encompasses the Baltic Sea: Its chief city is Stockholm. That part of it that lies on the east side of the Baltic is called Finland, Livonia, &c. and the southern part on the west side next to Denmark is called Gothland.

All the north-east part of Europe is Russia and Muscovy, under the government of the czar, whose capital city is Moscow. His conquests have lately joined Livonia to his dominion, which before belonged to Sweden, and there he has built the city Petersburgh.

Lapland is a cold savage country that lies on the north of Sweden, and belongs to three princes, *viz*, the Dane, the Swede, and the Muscovite.

Note, That Norway, Lapland, and Sweden, were once all comprised under the general name of Scandinavia.

II. The *middle parts* of Europe are France, Germany, Poland, Hungary, and Little Tartary.

France lies just southward of England; its northern coast is washed by the English Channel; its western shores by the Atlantic Sea; and its southern by the Mediterranean: Its chief city is Paris.

Before I proceed to Germany, it is proper to mention a long row of distinct governments which lie on the east of France, and divide it from Germany and Italy. These are the Seven United Provinces, the Ten Spanish Provinces, the dukedom of Lorrain, the countries of Switzerland, Savoy, and Piedmont.

The Seven United Provinces are called by the name of Holland, because that is the biggest of them. They are a most considerable commonwealth, and their chief cities are Amsterdam, Rotterdam, Leyden, Utrecht, &c.

Southward of this lie the Ten Spanish Provinces, or the Low Countries or Netherlands, which are called by the name of Flanders, because that is the largest of them: They have belonged to the kingdom of Spain for some ages; but they are now under the Emperor of Germany; their chief cities are Brussels, Antwerp, Louvain, Mons, Namur, Ghent, &c.

Lorrain lies to the south of Flanders, and is governed by a duke: Its chief town is Nancy.

Switzerland is the next: It is a free republic divided into thirteen parts, commonly called the Swiss Cantons, *viz*. Zurich, Bern, Basil, Lucern, &c. Their allies are the Grisons, the Valtoline, &c. The commonwealth of Geneva might also be mentioned here, which is a very small but free sovereignty, and maintains its rights, because none of its neighbours will let the others seize and possess it.

The dukedom of Savoy and Piedmont borders upon the south of Switzerland, and

reaches to the Mediterranean Sea: Its chief city is Turin; its duke is lately made king of Sardinia.

I proceed now to Germany, which stands in the very heart of Europe; it is called an empire, and its chief city, where the emperor dwells, is Vienna: But there are in it many lesser governments, such as dukedoms, marquisates, bishoprics, and several free towns or cities that have some dependence upon the emperor, but yet are little sovereignties within themselves.

The most considerable of these is the dominion of the archduke of Austria, who is king of Bohemia and Hungary, and is generally chosen emperor. The nine electorates are next in honour, which are so called because their governors are electors by whom the emperor of Germany is chosen. Their names or titles are these: 1. The archbishop of Mentz. 2. The archbishop of Triers or Treves. 3. The archbishop of Cologn. 4. The king of Bohemia. 5. The duke of Bavaria. 6. The duke of Saxony. 7. The marquis of Brandenburgh, now king of Prussia. 8. The prince palatine of the Rhine. 9. The duke of Brunswick and Lunenburgh, who is also king of Great Britain. Besides all these there are many small principalities governed by secular or ecclesiastical powers, which are too numerous to be reckoned up here.

Poland is a large kingdom lying to the east of Germany: It comprehends also the large province of Lithuania: The chief cities of this kingdom are Warsaw and Cracow. I might here mention the country of Prussia, which some years past has been dignified with the name of a kingdom: It is situate northward between Germany and Poland. The king resides at Berlin in Brandenburgh.

Hungary is a kingdom which lies just south of Poland, its chief towns are Presburgh and Buda: It has been in a great measure under the government of the Turks; but it now belongs to the emperor of Germany.

Little Tartary, which is also called Crim Tartary, is a small country lying to the east of Poland, and stretching along on the north side of the Euxine or Black Sea.

III. We go on now to the *southern parts* of Europe; and these are Spain, Italy, and the European dominions of the Turk.

Spain is the most southern kingdom of Europe, a large country; its capital city, Madrid, stands in the midst of it: On the west side of it lies the kingdom of Portugal, bordering all along upon it; it was once a part of Spain, but now is subject to a distinct king: Its chief city is Lisbon.

Italy is a large peninsula in the Mediterranean Sea, and contains various governments in it, *viz.* Mantua, Modena, Parma, Lucca, Genoa, &c. but the most noted and remarkable are these five, Venice, Milan, Florence or Tuscany, Naples, and the State of the Church, which is the dominion of the pope, whose chief city is Rome.

In the south-east part of Europe lies the famous country of Greece, which contains the ancient provinces of Macedonia, Thessalia, Achaia, &c. with the towns of Thessalonica, Philippi, Athens, Corinth, &c. and the peninsula of Peloponnesus, now called the Morea: But all these, together with the more northern provinces of Transilvania, Walachia, Bulgaria, Romania, &c. are now almost entirely under the dominion of the Turk, whose chief city is Constantinople, situate at the mouth of the Euxine Sea. All this is called Turkey in Europe.

Thus have we gone through the northern, and middle, and southern countries of Europe: But it may be proper to mention also some of the chief islands of this part of the world, as well as the mountains of Europe and its rivers.

Near to Italy, France, and Spain, lie several islands in the Mediterranean Sea; such as Majorca, Minorca, Ivica, Corsica, Sardinia, Sicily, and Malta, which belong to different princes.

On the east side of Greece is the Ægean Sea, or Archipelago, in which are many small islands, and Crete a large one: On the west side of Greece is the Gulf of Venice, or the Adriatic Sea, in which also there are several small islands, as Corfu, Cephalonia, Zant, &c.

Divers other isles there are which are included in Europe; as the Isle of Man, of Anglesey, of Wight, Jersey, Guernsey, &c. which belong to England: The Hebrides on the west of Scotland, the Orcades, and Shetland Isles on the north: Some in the Baltic Sea, which belong to Sweden and Denmark: The Azores or Western Islands in the Atlantic Sea, which are under the king of Spain. And several others of less note.

Some of the most remarkable mountains in Europe are these: 1. The Alps between France and Italy. 2. The Apennine hills in Italy. 3. The Pyrenean hills between France and Spain. 4. The Carpathian mountains in the south of Poland. 5. The Peak in Derbyshire in England. 6. Plinlimmon in Wales, &c. Besides several volcanos, or burning mountains, as Vesuvius and Stromboli in Naples, Mount Ætna, now called Mon-Gibel, in the island of Sicily, and Mount Hecla in the cold isle of Iceland.

The principal rivers of note in Europe are the Thames and the Severn in England; the Tay in Scotland; the Shannon in Ireland; the Tagus in Portugal and Spain; the Po and Tiber in Italy; the Weisel or Vistula in Poland. In Germany the Elbe and the Oder, the Rhine and the Danube. In France the Sein and the Rhone. In Muscovy the Don and the Volga.

The Danube and the Volga are the largest rivers in Europe, the Danube running through all Germany and Turkey into the Euxine or Black Sea; and the Volga, which some authors attribute to Asia, because, though it runs through a great part of Muscovy, yet it empties itself into the Caspian Sea.

SECTION XIV.

OF ASIA, AND ITS SEVERAL COUNTRIES AND KINGDOMS.

ASIA may be divided into these five parts, *viz.* Turkey, Persia, India, China, and Tartary.

The dominion of the Turks in Asia, contains several countries in it, *viz.* Natolia, Palestine, Arabia, Georgia, &c.

1. Natolia, or Asia Minor, which is a peninsula, between the Euxine Sea and the Mediterranean, where lay the ancient countries of Galatia, Cappadocia, Pontus, Bithynia, Lycaonia, Cilicia, Phrygia, Pamphylia, &c. through which the apostle Paul travelled and made many converts there. Here were the seven famous churches of Asia, to which the epistles were written in the second and third chapters of the Revelations,

viz. Ephesus, Smyrna, Sardis, &c. Many of them are now called by different names; but Smyrna is one of the chief cities in the whole country.

II. Palestine, or the Holy Land, and all the adjacent countries of Syria, Chaldea, Mesopotamia, &c. The chief towns in it now are Aleppo, Scanderoon or Alexandretta, Bagdat or Babylon, Damascus, Jerusalem, &c.

III. Arabia, which anciently was divided into Arabia the Happy, Arabia the Desert, and Arabia the Stony, lying all between the Persian Gulf and the Red Sea: The chief towns of it are Mecca, Medina, &c.

IV. Georgia and Turkomania, formerly called Armenia Major, are northern provinces belonging to the Turks, that lie between the Euxine and the Caspian Sea.

Persia, a large empire, lies eastward from Turkey, between the Caspian and Indian Seas: Its capital city is Ispahan.

India is divided in two parts by the river Ganges. India on this side the Ganges contains the biggest part of the empire of the Great Mogul, whose chief city is Agra. In a peninsula or large promontory in this part of India are various settlements of the European nations, as at Fort St. George, Tranquebar, Goa, &c. Beyond the river Ganges lies another large peninsula, which contains the countries of Pegu, Siam, Tunquin, Cochinchina, &c.

Eastward of all these lies the empire of China, a large and a polite nation, whose chief city is Pekin. These countries last named are called in general the East Indies.

Great Tartary takes up all the northern part of Asia. That which borders upon Muscovy is often called Muscovy in Asia: The whole is a savage, unpolished, and unknown country, as to the parts as well as the inhabitants of it; and how far it reaches to the north-east, no man in this part of the world can inform us.

There are multitudes of islands which belong to Asia, the chief of which are Japan, Borneo, Celebes, Java, Sumatra, Ceylon, the Philippine Isles, the Maldive Isles, &c. all these in the Eastern Ocean, and Cyprus in the Mediterranean.

The most remarkable rivers are Tigris and Euphrates in Turkey, Ganges and Indus in India, whence the whole country took its first name.

The chief mountains are Imaus, Caucasus, Ararat, which are but different parts of the long ridge of hills which runs through Asia from the west to the east, and is called by the ancient general name of Mount Taurus.

SECTION XV.

OF AFRICA AND ITS DIVISIONS.

Africa is the third quarter of the world: It may be divided into the following territories: Egypt, Barbary, Bildulgerid, Zaara, Nigritia, Guinea, Nubia, Abyssinia, and Ethiopia.

Egypt lies to the north-east and joins to Asia; the chief cities are Grand Cairo and Alexandria.

Barbary is a long country, it comprehends most part of the ancient Mauritania, or the country of the Moors; it lies along the coast of the Mediterranean Sea: Its chief

towns are Fez, Morocco, Mechaness, Sallée, Tangier, Ceuta, Algier, Tunis, Tripoli, and Barca.

Bildulgerid, or the ancient Numidia, has its chief town Dara; it lies south and south-east of Barbary, unless it be reckoned a part of it.

Zaara comes next; it is a desert inland country, and much unknown. So is Nigritia, or the land of the Negroes, which lies to the south of Zaara; as Guinea is situated in the south of Nigritia. The Tooth or Ivory Coast, and the Quaqua Coast, and the Gold Coast, are several divisions of Guinea well known to mariners.

Nubia lies southward of Egypt, as Abyssinia does to the south of Nubia, both near the coast of the Red Sea.

Ethiopia has been given as a general name to all the countries that compose the south-east and south part of Africa, at least, all the maritime countries or coasts from Guinea on the western side to Abyssinia, or Nubia on the east, and sometimes it includes Abyssinia also, which is called the Lesser or Inner Ethiopia.

In the more southern part of Ethiopia, are the inland kingdoms of Monomotapa, Monoemunga, &c. On the western coast, Congo, Loango, Angola; the eastern coast is Zanguebar and the Mozambique: The southernmost coast is inhabited by the Cafres and the Hottentots, near the Cape of Good Hope, who are famous for their stupidity, living in the most brutal and barbarous manner, as though they had little of human nature in them beside the shape.

The chief islands near Africa are the large isle Madagascar, called the Isle of St. Lawrence, that lies towards the eastern sea; and on the west or north-west are the small Islands of Cape Verd, the Canary Islands, and the Madeiras, in the Atlantic Sea, with others of lesser note in the Ethiopic Sea.

The most famous rivers in Africa are the Nile and the Niger. The Nile runs through all the eastern part of the country, and empties itself into the Mediterranean Sea by many mouths at the land of Egypt. The river Senegal, anciently called Niger, runs through Negroland, into the Atlantic Ocean.

The most remarkable mountains are these, (1.) Mount Atlas, or the Atlantic hills, in the west of Barbary, which were supposed by the ancients to be the highest in the world; whence came the fable of Atlas, a giant, bearing the heavens upon his shoulders. (2.) The Mountains of the Moon, which lie much more southward toward Monomotapa: And (3.) The exceeding high hill of Teneriffe, which is among the Canary Islands.

SECTION XVI.

OF AMERICA AND ITS DIVISIONS.

America is the fourth and last quarter of the world, it is divided into the northern and southern parts by an isthmus or neck of land at Darien or Panama.

Northern America includes Canada, the English Empire, Old Mexico, and New Mexico, Florida, and the Northern Land.

The Northern Land contains some islands and settlements of European nations, in Hudson's Bay and other coasts of Groenland (Greenland), near the arctic circle, but few of them are much known, frequented, or inhabited.

As for the north-west part of North America, it is utterly unknown whether it be

Island or Continent, whether it may not reach thousands of miles farther and be joined to the north-east part of Great Tartary.

Canada, or New France, lies on the north-east side of the river of St. Lawrence; its chief town is Quebec.

The English empire in America lies along the eastern coast from about thirty to almost fifty degrees of north latitude.

New England is the chief province, of which Boston is the principal town or city. North of New England lies Acadia, sometimes called New Scotland: Its chief town was Port Royal, which hath changed its name to Annapolis. Southward of New England lie New York, New Jersey, Pennsylvania and Maryland, Virginia and Carolina. On the west and north-west side of these plantations lie large tracts of land with many great lakes in it, where various nations of savages inhabit.

Florida comes next in course to be mentioned, it borders east or north-eastward on Carolina, and westward it reaches to the river Missisippi and beyond it: It is bounded by the sea on the south, but there have been no very great or remarkable towns or settlements formed there by the Spaniards, who found and named it.

New Mexico, or New Granada, lies west of Florida, possessed also by the Spaniards; its chief town is St. Fé, upon the river Nort.

Mexico, or New Spain, lies more south, it is a large and rich country, long and uneven, stretching from north-west to south-east; and contains many provinces in it belonging to the Spaniards, who have destroyed millions of the natives there. It has several towns, of which the chief has the name of Mexico given it. Florida and Mexico together make a large bay, which is called the Gulf of Florida, or the Gulf of Mexico. This country reaches down to the small neck of land whereby South America is joined to it. On this neck of land are Panama on the south side, and Porto-Bello on the north.

The southern part of America is something like a large triangle lying in the vast Southern Ocean, and almost encompassed by it: On the western side this ocean is called the Pacific Sea, because seldom vexed with storms.

This southern part of America comprehends many great countries, *viz.* Terra Firma, Peru, Amazonia, Guinea, Brasil, Chili, Paraguay, Terra Magellanica, &c. The inland parts are very much unknown, but the greatest part of the coasts are possessed by the inhabitants derived from Spain and Portugal, who have made various settlements there.

The chief islands of America in the north are Newfoundland, which is a triangle near Acadia; then Cuba, Hispaniola, and Jamaica, all in the same climate with Mexico. The lesser isles are called Lucayes, or Bahama Islands, south-east of Florida; and the Caribbee Islands eastward of Hispaniola. On the west side of North America lies a very large and long island, called California, with many little ones near it.

The chief island in South America is Terra-Delfuego, which lies near the main land, and thus makes the Straits of Magellan. There are many others of less extent and note, both on the coast, and in the vast South Sea.

The most noted rivers of North America are the great rivers of St. Lawrence, or Canada, that divides New England from New France; and the river Missisippi where the French have made large settlements.

In South America the two great rivers are the Amazon with all its branches, and Rio de la Plata or the River of Plate.

The chief mountains are the Apalachian Hills in North America, which divide Florida from the more northern countries; and the Andes in South America, which is a long ridge of mountains running from the south part of America toward the north: Travellers suppose them to be the highest in the world.

Thus I have described the various countries of the earth in a very brief but imperfect manner, sufficient only to give the young and ignorant reader a taste of geography, and to encourage him to pursue the study farther in that excellent manual *Gordon's Geographical Grammar*, or in volumes of larger size.

SECTION XVII.

OF THE FIXED STARS ON THE HEAVENLY GLOBE.

As the terrestrial globe has the various countries, cities, mountains, rivers, and seas, drawn upon it: So on the celestial globe are placed the fixed stars exactly according to their situation in the heavens.

Yet there is this difference between the representations made by the heavenly and those made by the earthly globe, *viz.* That the several countries, rivers, and seas, are represented on the convex or outward surface of the earthly globe, just as they lie naturally on the convex surface of the earth; whereas the stars naturally appear to us in the concave, or inward hollow surface of the heaven, but they are represented on the heavenly globe on the convex surface of it. Therefore we must suppose our eye to be placed in the centre of the globe, in order to have the stars and heavens appear to us in their concavity and proper situation.

Planets and *comets* are vulgarly called by the general name of stars; but the *fixed stars* differ from the planets and the comets in this, that they always keep the same place or distance with regard to one another; whereas the planets and comets are perpetually changing their places and distances with regard to one another, and with regard to the fixed stars. They differ also in this respect, that the fixed stars generally twinkle, except when near the zenith, or seen through a telescope; and they shoot sprightly beams like the sun, which is usually given as a proof, that, like the sun, they shine with their own light: The planets have a more calm aspect like the moon, and never twinkle, which is one argument among many others that they derive their light from the sun, and shine only by reflection.

For our better acquaintance with the fixed stars, astronomers have reduced them to certain constellations. This we have shewn already in the second section, concerning those stars that lie in the zodiac, which are reduced to twelve constellations, and called the twelve signs, *viz. aries* or the ram, *taurus* or the bull, *gemini* or the twins, &c. the rest of the stars are distinguished into the *northern* and *southern constellations*, as lying north or south of the zodiac or ecliptic.

The *northern constellations* were thus framed by the ancients, Ursa Minor or the little bear, in whose tail is the pole star, Ursa major or the great bear, Draco or the dragon, Cepheus, whose feet are just at the north pole: Cassiopeia and her chair, Andromeda, the northern triangle, Perseus with Medusa's head, Auriga or the charioteer, Bootes or the hunter, who is sometimes called Arcturus or the bear-keeper, Corona Borealis or the northern crown, Egonasi or Hercules kneeling, Lyra or the harp,

Cygnus or the swan, Pegasus or the great flying horse, Equuleus or Equiculus the little horse's head, Delphinus or the dolphin, Sagitta or the arrow, Aquila or the eagle, which some call the vulture, Serpens or the serpent, and Serpentarius the man who holds it.

To these twenty-one northern constellations were afterwards added, Antinous at the equator next to the eagle, Cor Caroli or King Charles's heart, a single star south of the great bear's tail, and Berenice's hair, a few small stars south of Charles's heart, &c.

The *southern constellations* known to the ancients are Cetus the whale, and the river Eridanus, Lepus the hare, the glorious constellation of Orion with his girdle, sword, and shield, Sirius or the great dog, Canicula or the little dog, Hydra or a large serpent, the ship Argo, Crater or the two-handed cup, Corvus the crow, or the raven, Centaurus or the half-man half-horse, Lupus or the wolf, Ara or the altar, Corona Australis or southern crown, Piscis Notius or the southern fish.

To these fifteen there have been added twelve other constellations made up of the fixed stars toward the south pole which are never visible to us in Britain, and therefore I shall not mention them.

Astronomers have framed some lesser constellations which are contained in the greater, as the Pleiades or the seven stars, and the Hyades in Taurus or the bull: Capella or the goat, and which is a very bright star so called, in the arms of Auriga or the charioteer: The Manger and Asses in the Crab, which indeed is nothing but a bright spot composed of a multitude of small stars: Charles's Wain which are seven bright stars in the rump and tail of the Great Bear, three of which in the tail resemble the Horses, and the other four, *c*, *d*, *b*, *r*, a square cart: See *Figure* 30. The two hindmost stars in the cart, *viz.* *b* and *r* are called the pointers, because they point to the north pole *p*.

Besides these there are several other smaller stars scattered up and down in the heavens, which are not reduced to any of the constellations; though of late years Hevelius, a great astronomer, has made constellations of them which are described upon some modern globes.

The *fixed stars* are of different sizes, and are divided into those of the first, second, third, fourth, fifth, and sixth magnitudes.

There are but a few stars of the first and second magnitude, and many of them have remarkable names given to them, as the Ram's Head, Aldebaran or the bull's eye, Capella or the goat, the three stars in Orion's girdle, the Lion's Heart, Deneb or the lion's tail, Regel the star in Orion's left foot, Spica Virginis, which is an ear of corn in the virgin's hand, Hydra's heart, the scorpion's heart, the Eagle or Vulture's heart, Ala Pegasi or the horse's wing, Fomahant a large star in the southern fish's mouth near Aquarius, the Pole Star in the Little Bear's Tail, &c. See more in the table of fixed stars at the end of this book.

Some remarkable stars are called by the name of the constellation in which they are, as the Great Dog, the Little Dog, Lyra or the harp, Arcturus the bear-keeper, Capella the goat, &c.

As the globe of the earth, with all the lands and seas described on a terrestrial sphere, is represented on maps, so the celestial sphere, with all the fixed stars, is often represented on two tables or planispheres, projected, one on the plane of the equator with

the two poles of the world in their centres; and the other on the plane of the ecliptic with the poles of the ecliptic in their centres*.

Note, This sort of projections has sometimes been furnished with some little appendices which are moveable, and makes an instrument, called a nocturnal, to take the hour of the night, and perform many other astronomical problems by the stars.

It is hardly necessary to say, that the stars are supposed to keep their constant revolution once in twenty-four hours by day as well as by night: But the day-light conceals them from our eyes.

The sun in its annual course moving from west to east through all the signs of the zodiac hides all those stars from our sight which are near its own light or place in the heavens; and therefore at several seasons of the year you see different stars or constellations rising or setting, or upon the meridian at every hour of the night: And as the sun goes onward daily and monthly toward the east, the Eastern constellations come daily and monthly within the reach of the sun-beams and are concealed thereby, which is called their *setting heliacally*. And the western constellations hereby getting farther off from the sun-beams, are made visible to us, which is called *rising heliacally*.

Thus, as I intimated before, we may easily find what stars will be upon the meridian every midnight, by considering in what sign the sun is, and in what degree of that sign; for the sun with the stars that are near it being upon the meridian at noon, the stars that are directly opposite to them in the heavens will be upon the meridian that day at midnight. And by the same means if you observe what stars are upon the meridian at midnight, you easily infer the sun is in the opposite point of the heavens at midnoon.

Here it should not be forgotten, that there is a broad uneven path encompassing the heavens, passing near the north pole, which is brighter than the rest of the sky, and may be best seen in the darkest night; this is called the *milky way*, which later philosophers have found, by their telescopes, to be formed by the mingled rays of innumerable small stars. It is to the same cause that some other bright spots in the sky (though not all) are ascribed, which appear to us like whitish clouds in midnight darkness.

SECTION XVIII.

OF THE PLANETS AND COMETS.

Though the planets and comets are never painted upon the globe, because they have no certain place, yet it is necessary here to make some mention of them; since they are stars much nearer to us than the fixed stars are, and we know much more of them.

The planets are in themselves huge dark bodies which receive their light from the sun, and reflect it back to us. They are called planets from a Greek word which signifies *wanderers*, because they are always changing their places in the heavens, both with regard to the fixed stars and with regard to one another.

The *planets* are placed at very different distances from the centre of our world, whe-

* Mr. Senex, at the Globe over-against St. Dunstan's, in Fleet-street, has lately printed the best that ever were in England, or perhaps in any country.

ther that be the earth or the sun, and they make their various revolutions through the twelve signs of the zodiac in different periods of time.

Saturn	in 29 years	and	167	days,	that is, about	24	weeks.
Jupiter	in 11		314			45	
Mars	in 1		321			46	
Earth or Sun	in 1		0			0	
Venus	in 0		224			32	
Mercury	in 0		87			12½	
Moon	in 0		27½			4	

As the ecliptic line is the orbit or annual path of the earth or sun, so each planet has its proper orbit, whose plane differs some few degrees from the plane of the orbit of the sun, and to a spectator's eye, placed in the centre, would intersect or cut the sun's orbit at two opposite points or nodes. Now the distance of a planet from the ecliptic, measured by an arch perpendicular to the ecliptic, is the latitude of that planet, as before.

To represent this, as in *Figure* 11, you may imagine as many hoops as there are planets thrust through with several straight wires, and thereby joined in different places to the hoop that represents the plane of the ecliptic, *i. e.* the sun's or earth's orbit; and then let these hoops be turned more or less obliquely from the plane of the ecliptic: For all the several orbits or paths of the planets do not cross or intersect the ecliptic or sun's path in the same point, nor at the same angles: But their nodes or intersections of the ecliptic are in different parts of the ecliptic, and also make different angles with it.

Among the several uses of observing the latitude of a planet, see one very necessary in Problem XXXVII.

The *comets* were, by Aristotle and his followers, supposed to be a sort of meteors or fires formed in the sky below the moon, continuing for some months, and then vanishing again. But by later astronomers they have been found to be dark bodies, like the planets, moving through the heavens without any regard to the ecliptic, but in very different orbits, which are supposed to be ellipses or ovals of prodigious length, and returning at various periods of several scores or hundreds of years. Though it must be confessed, those parts of their orbits which are within the reach of our sight are so very inconsiderable parts of the vast ovals they are said to describe, that it has been much doubted, whether the lines they describe in their motion be not parabolical, or some other infinite curve; and thus whether the comets themselves are not wandering stars that have lost all regular revolution, and perhaps have no settled periods at all, and may never return again: But comets appear so seldom that they have scarce given the nice inquirers of these last ages sufficient opportunity to observe or calculate their motions with such an absolute certainty as could be wished.

Thus I have finished the speculative part of this discourse, which contains the rudiments or first principles of astronomy: It is called the spherical part, because it treats of the doctrine and use of the sphere; and I have concluded therein the general part of geography, and given a slight survey of the particular divisions of the earth.

It is indeed the second or special part of geography that treats properly of these particular divisions of the earth which I have but slightly run over, and in a much larger

manner enumerates not only all the kingdoms, states, and governments of the world, but also gives some account of their manners, temper, religion, traffic, manufactures, occupations, &c. It also describes the various towns and villages, the larger and lesser mountains, rivers, forests, the several products of every country, the birds, beasts, insects, fishes, plants, herbs, the soil, minerals, metals, and all rarities of art and nature: It relates also the various ancient and modern names of the nations, cities, towns, rivers, islands, &c. What remarkable occurrences of battles, victories, famine, desolations, prodigies, &c. have happened in every nation, and whatsoever has rendered it worthy of public notice in the world.

There are many books extant in the world on this subject; some of lesser size, such as *Gordon's Geographical Grammar*, *Chamberlain's Geography*; and larger, *viz. Morden's Geography Rectified*, in quarto, *Thesaurus Geographicus*, *Moll's Geography*, in folio, &c.

The second or special part of astronomy is called the theory of the heavens, or the sun and planets, which will lead us into the knowledge of a thousand beautiful and entertaining truths concerning the system of the world, the various appearances of the heavenly bodies, and the reasons of those appearances, *viz.* a more particular and exact account of the day and night, and of the several seasons of the year, spring, summer, autumn, and winter, of the length and shortness of the days: Why in the winter the sun is nearer to us than it is in the summer, and why the winter half-year is seven or eight days shorter than the summer half-year: Whence come the eclipses of the sun and moon, both total and partial; why the moon is only eclipsed when she is full, and the sun only when she is new: Whence proceed the different phases of the moon, as the new or horned moon, the half-moon, the full, &c. Why the two lower planets, Mercury and Venus always keep near the sun, and never move so far as two whole signs from it: Why Venus is horned, halved, and full, as the moon is: Why the three superior planets Mars, Jupiter, and Saturn, appear at all distances from the sun, and are sometimes quite opposite to it: Why both the upper and lower planets sometimes appear swifter, sometimes slower: Why they seem sometimes to move directly or forward, sometimes retrograde or backward, sometimes are stationary, or seem to stand still: Why they are sometimes nearer to the earth, which is called their perigeum, and sometimes farther from the earth, which is called their apogeum, and by this means appear greater or less. Why they are nigher to, or farther from, the sun, which is called their perihelion and aphelion; and in what part of their orbits this difference falls out: How it comes to pass that they seem higher in the horizon than really they are by refraction, and how again they seem lower than they really are by the parallax.

In this part of astronomy, it is proper also to shew the different schemes or hypotheses that have been invented to solve or explain all these appearances of the heavenly bodies. Here the ptolemaic or ancient system should have the first place, to represent how the ancients placed the earth in the centre of the world, and supposed the sun to move round it amongst the other planets as it appears to the vulgar eye; and what tedious and bungling work they made by their contrivance of solid transparent spheres of different thicknesses, placed in eccentric order and assisted by their little epicycles: What infinite embarrassments and difficulties attend this rude and ill adjusted contrivance, and how impossible it is to solve all the appearances of nature by this hypothesis.

Then the modern or *copernican* scheme should be represented, which makes the heaven all void, or at least filled only with very fine ethereal matter; which places the

sun in the centre of our world, with all the planets whirling round it; which makes the earth a planet, turning daily round its own axis, which is the axis of the equator, to form day and night; and also carried yearly round the sun in the ecliptic, between the orbits of Venus and Mars, to form summer and winter. This scheme also makes the moon a secondary planet rolling monthly round the earth, and carried with it in its yearly course round the sun, whereby all the variety of appearances of the sun and moon, and of all the planets, as well as the differences of day and night, summer and winter, are resolved and explained with the greatest ease, and in the most natural and simple manner.

Here also it should be shewn that as the moon is but a secondary planet, because it moves round the earth which is itself a planet: So Jupiter, which moves round the sun, has also four secondary planets or moons moving round it, which are sometimes called his satellites or life-guards. Saturn also has five such moons, all which keep their certain periodical revolutions: And beside these, Saturn is encompassed with a large flat ring, 21,000 miles broad, whose edges stand inward toward the globe of Saturn, like a wooden horizon round a globe, at about 21,000 miles distance from it, which is the most amazing appearance among all the heavenly bodies: But these secondary planets which belong to Jupiter and Saturn, together with this admirable ring, are visible only by the assistance of telescopes: And yet mathematicians are arrived at so great an exactness in adjusting the periods and distances of these secondary planets, that by the motions and eclipses of the moons of Jupiter they find not only the true swiftness of the motion of light or sun-beams; but they find also the difference of longitude between two places on the earth.

It may be manifested here also that several of the planets have their revolutions round their own axis in certain periods of time, as the earth has in 24 hours; and that they are vast bulky dark bodies, some of them much bigger than our earth, and consequently fitted for the dwelling of some creatures; so that it is probable they are all habitable worlds furnished with rich variety of inhabitants to the praise of their great Creator. Nor is there wanting some proof of this from the Scripture itself. For when the prophet Isaiah tells us, that "God, who formed the earth, created it not in vain, because he formed it to be inhabited," *Isaiah*, xlv. 18. he thereby insinuates, that had such a globe as the earth never been inhabited, it had been created in vain. Now the same way of reasoning may be applied to the other planetary worlds, some of which are so much bigger than the earth is, and their situations and motions seem to render them as convenient dwellings for creatures of some animal and intellectual kind.

Many of these things have been performed by ingenious men with great exactness, for the use of persons learned in the mathematics; but I know not any short, plain, and intelligible account of them, fitted for the use of the unlearned world, except among Dr. Wells's volumes, entitled *Mathematics for a Young Gentleman:* Yet I persuade myself, that some parts of it might be performed with greater ease and clearness, in a more natural method, and to much greater perfection, if some person of peculiar skill in these sciences and of equal condescension would undertake the work.

SECTION XIX.

PROBLEMS RELATING TO GEOGRAPHY AND ASTRONOMY TO BE PERFORMED BY THE GLOBE.

As theorems in mathematic science are certain propositions declaring some mathematical truth: So a problem is a mathematical question proposed to be resolved, or some practise to be performed.

Because this problematic part will require the recollection of a great many things in the former sections, I think it may not be improper to give a short summary of definitions of the chief subjects of discourse in the doctrine of the sphere, and set them in one view.

DEFINITIONS.

THE *latitude of a place* on the earthly globe, is the distance of the zenith of that place from the equator, toward the north or south pole, measured by the degrees of the meridian.

The *elevation of the pole* is the height of the pole above the horizon of that place, measured on the meridian: And it is always the same number of degrees as the latitude.

The *longitude of a place* is the distance of it toward the east or west from some first meridian, and it is measured on the equator.

The *declination of the sun*, or any *star* or *planet*, is its distance northward or southward from the equator, measured on the meridian. It is the same thing as latitude on the earthly globe.

The *right ascension* of the sun is its distance from that meridian that cuts the point *aries*, measured eastward on the equator; it is much the same with longitude on the earthly globe.

The *hour* of the sun is its distance from noon, or the meridian of the place, measured on the equator by 15 degrees, for every 15 degrees on the equator make an hour. Or it may be reckoned from the opposite meridian, or midnight.

Note, The right ascension is reckoned either in degrees or in hours.

The *latitude of a star*, or *planet*, is its distance northward or southward from the ecliptic: *Note*, The sun has no latitude, because it is always in the ecliptic.

The *longitude of the sun*, or *star*, is its distance from the point *aries* eastward, measured on the ecliptic. But with regard to the sun, or a planet, this is usually called the *place* of the sun, or planet, for any particular day, *i. e.* its place in the zodiac, or the degree of the sign in which it is at that time.

The *altitude* or *height* of the sun, or a star, is its distance from and above the horizon, measured on the quadrant of altitudes.

The *depression* of the sun, or star, is its distance from and below the horizon.

The *azimuth* of the sun, or a star, is its distance from the cardinal points of east, west, north, or south, measured on the horizon.

The sun or star's *meridian altitude* is its altitude or height when it is on the meridian, or at the south.

The *vertical altitude* of the sun is used by some writers for its height above the horizon, when it is in the azimuth or vertical circle of east or west. But the sun is said to be vertical at any place when it is in the zenith of that place at noon.

The *amplitude* of the sun, or star, is its azimuth or distance from east or west at rising or setting.

The *ascensional difference* is the time of the sun or star's rising or setting before or after six o'clock: Or it is the difference between the sun or star's semidiurnal arc and a quadrant, or 90 degrees, as some persons express it, because 90 degrees, or a quadrant, reaches from six o'clock to twelve.

PROBLEMS.

Problem I. To find the longitude and latitude of any place on the earthly globe.

Turn the globe about till the place come just under the side of the brazen meridian on which the figures are, which is called its graduated edge, then the degree marked on the meridian just over the place, shews the latitude, either north or south: And the globe so standing, that degree of the equator, which is cut by the meridian shews the true longitude of the place. So London will appear to have $51\frac{1}{2}$ degrees of north latitude, and near 18 degrees of longitude, counting the first meridian at Teneriffe. So Rome has $41\frac{3}{4}$ degrees of north latitude, and about 13 degrees of longitude, eastward from London, or almost 31 degrees from Teneriffe.

Problem II. The longitude or latitude of any place being given, how to find that place on a globe or map.

If only the latitude of a place be given, the place itself may be easily found, by casting your eye eastward and westward along that parallel of latitude in that part of the world where it lies, and the place, if it be marked on the globe, will soon appear.

If the longitude only were given, guide your eye along that meridian northward or southward, and you will quickly see it.

But if both longitude and latitude be given, then the place is immediately found, for where the given line of longitude or meridian cuts the given line of latitude, there is the place required. These two problems also may be practised on a map as well as on a globe.

Problem III. To find the distance of any two places on the earthly globe, or two stars on the heavenly.

Here let it be noted that a degree of the meridian, or of the equator, or of any great circle on the earthly globe, is found by measure to be $69\frac{1}{2}$ or 70 English miles: See Prob. XII. Sect. XX. Though geographers many times count 60 geographical miles to a degree, making them the same with the minutes of a degree for the greater ease in computation.

Let it be noted also, that all the degrees on the meridians or lines of longitude on the globe are equal, because all those lines are great circles; but in the parallels of latitude, the farther you go from the equator the circle grows less and less, and consequently the degrees of those circles are less also: And therefore, if two distant places are either

both on the equator, or have the same meridian, the number of the degrees of their distance on the equator, or on the meridian, being reduced to miles shews you their true distance: But if the two places are not both on the equator, nor on the same meridian, you must find their true distance by the following method:

To perform this third problem, lay the quadrant of altitude from one place to the other, and that will shew the number of degrees of distance, which being multiplied by 60 geographical miles, or by 70 English miles, will give the distance sought.

Or you may take the distance between the two places with a pair of compasses and measure it upon the equator, which shews the distance in degrees, and then reduce them to miles.

The quadrant of altitudes, or a pair of compasses, in the same manner will shew the distance of any two stars on the heavenly globe, *viz.* in degrees, but not in miles.

Observe here, That though these methods will find the true distance of places on the globe, yet on a map the same methods are useless; because in maps or plain surfaces the degrees of longitude marked on the same parallel of latitude are unequal, and so the degrees of latitude marked on the same meridian are often unequal. See Section XI. concerning maps. The only way, therefore, of measuring distances on a map is to measure the number of degrees on the nearest correspondent line of longitude or latitude, and apply that to the distance required, which after all is but an uncertain account.

Problem IV. To find the antœci, periœci, and antipodes of any place given, suppose of London.

Bring London to the meridian, observe its latitude northward, then reckon so many degrees on the meridian from the equator southward, and it shews the place of the antœci.

Keep London under the meridian, set the hour index or pointer, on the dial at the pole to the upper twelve, which is twelve o'clock at noon, turn the globe about till the index point to twelve at midnight, and the place that will be under the same degree of the meridian where London was, shews where the periœci dwell.

The globe so standing, count the same degrees of latitude from the meridian southward, and that will shew who are the antipodes to London.

Problem V. Any place being given, to find all those places which have the same hour of the day with that in the given place.

All the places that have the same longitude have the same hour. Bring the given place therefore to the brazen meridian, and observe what places are then exactly under the graduated edge of the meridian, for the people in those places have the same hour, and their habitation has the same longitude.

Problem VI. Any place being given, suppose Paris, to find all those places in he world which have the same latitude, and consequently have their days and nights of the same length.

Bring Paris to the meridian, and you find it near 49 degrees of north latitude. Turn the globe all round, and all those places which pass under the 49th degree of the meridian have the same latitude with Paris, and the pole is just as much elevated above their horizon, *viz.* 49 degrees.

Problem VII. To rectify the globe according to the latitude of any given place.

Elevate the proper pole, whether it be north or south, so far above the horizon as is

the latitude of the place proposed; this is done by moving the pole of the globe upward from the horizon, counting by the degrees of the under part of the meridian, which begin to be numbered from the pole; thus for London you must raise the pole $51\frac{1}{2}$ degrees above the horizon.

Then while London stands under the meridian, the true and real situation of it is exactly represented on the globe with its proper horizon: For London is by this means placed in the zenith, or on the very top of the globe, at 90 degrees distance from the horizon every way; and thus the zenith is as high above the equator on the south side as the pole is above the horizon on the north side.

To render this representation of the situation of any place yet more perfect, it is a useful thing to have a small mariner's compass at hand with a needle touched with a loadstone, to shew which are the north or south points of the real horizon, and then, as near as you can, set the brazen meridian of the globe exactly north and south.

Thus the wooden horizon will be a perfect parallel to the real horizon, the brazen meridian to the real meridian, the equator, the ecliptic, and all the lesser circles, and the points on the globe will represent those circles and points on the earth or in the heavens, in their proper position.

Problem VIII. The hour being given in any place, as at London, to find what hour it is in any other part of the world.

Rectify the globe for London, bring the city of London to the side of the meridian where the degrees are marked; then fix the index of the dial-plate to the hour given, suppose four o'clock in the afternoon, this being done turn the globe and bring any places successively to the meridian, then the index or hour pointer will shew the true hour at the place required. Thus when it is four o'clock in the afternoon at London it is almost five at Rome, near six at Constantinople, it is almost half an hour past nine at night, at Fort St. George in the East Indies, it is near midnight at Pekin in China, it is eleven o'clock in the morning at Jamaica, and a little past noon at Barbadoes.

Problem IX. To rectify the globe for the zenith.

After the former rectification for the latitude of the place, fasten the edge of the nut of the quadrant of altitude, on its graduated side, at the proper degree of latitude on the graduated side of the brazen meridian, and that will represent the zenith of that place in the heavens.

The quadrant of altitude being thus fastened serves to measure the sun or star's altitude above the horizon, and the sun or star's azimuth; and it has been sometimes, though erroneously, used to shew the bearing of one place to another, as in the following problem.

Problem X. Any two places being given, to find the bearing from one to the other, *i. e.* at what point of the compass the one lies in respect to the other.

The common way whereby several writers have solved this problem is this: Rectify the globe both for the latitude and for the zenith of one of those places, and bring that place to the zenith. Then bring down the edge of the quadrant of altitude to the other place, and the end of the quadrant shall cut the horizon in the true point of the compass, and shew how the one bears to the other. So if you rectify the globe for the latitude and zenith of Barbadoes, you will find that Cape Finisterre in Spain, and Azoff in Muscovy, both lie in a direct line north-east from Barbadoes, according to this practice.

But here let it be noted, that though, according to this sort of measuring, they both lie north-east from Barbadoes, yet they do not lie north-east of one another; for if you rectify the globe for the latitude and zenith of Cape Finisterre, you will find Azoff lies near east-north-east from Cape Finisterre, or more than two points of the compass, *i. e.*, more that $22\frac{1}{2}$ degrees different from the north-east.

And if a sailor or traveller who is at Barbadoes should, every league or mile of his way, by observing the compass, still make toward the north-east, he would come sooner to the Hebrides, or Western Scotch Islands, than to Azoff, or even to Cape Finisterre. But the course that he must really steer to come to Cape Finisterre is near north-east and by east: And if he could sail all the way clear to Azoff from Barbadoes, he must steer still much more to the eastward: All which things shew the mistake of solving this problem in this manner.

Perhaps this may be made yet plainer to a learner, if we name two places which lie under the same parallel of latitude, *viz.* Madrid in Spain, and Pekin in China, latitude 40. Now these must always bear directly east and west from each other. But if you bring Madrid to the zenith, and having fixed there your quadrant of altitude, you bend it down to the horizon, it will not follow the course of the 40th parallel of latitude, and lead your eye to Pekin, but to much more southern places very far distant from Pekin, and which have a very different bearing, *viz.* to the Isle of Ceylon, &c.

Upon this account, the best writers call that the angle of position between two places, which is found by the quadrant of altitude thus fixed at the zenith of any place, and drawn down to the horizon: But they describe the rhumb or course of bearing from one place to the other in a different manner, *viz.* It is that point of the compass, toward which any person must constantly sail or travel, in order to arrive at the distant place given. And without all doubt this is the most just and exact account of things.

Now in order to find this, it is sufficient for a learner to know, that if any one of the lines drawn from the points of the mariner's compass marked on the globe, which are called rhumb lines, passes through both places, that line shews the course or bearing from one to the other, as the course from Cape St. Vincent in Portugal, to Cat Island among the Bahama Islands, is west and by south.

If no rhumb lines pass through those places, then that rhumb line to which those two places lie most parallel, shews their bearing: Thus the course from Barbadoes to Cape Finisterre is north-east and by east, or thereabouts.

If the learner has a mind to see the reason, why there must be such a difference between the angle of position between two places, and their course of bearing to each other, I know not how to represent it upon a flat surface plainer than by *Figure* 21.

Suppose the four cardinal points, north, south, east, and west, are represented on the globe by the letters N. S. W. E: Suppose three distant places are B, Barbadoes, C, Cape Finisterre, and A, Azoff. If the surface of the earth were not spherical, but a plane, and the meridians of these places were all parallel, as in that representation or projection of the globe, which is called Mercator's chart, then their angle of position and their course of bearing would be the same: Then as N S is the meridian of the place B, so *q u* would be the meridian of the place C, *viz.* a straight line and parallel to N S: Then the line B C A would be the line or rhumb of north-east, *viz.* 45 degrees distant from N S; which would represent both the angle of position and the course of bearing

Fig. 13

A Map of a Country exemplified

Fig. 17.

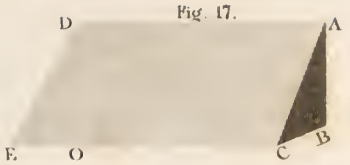


Fig. 14.

Fig. 16.

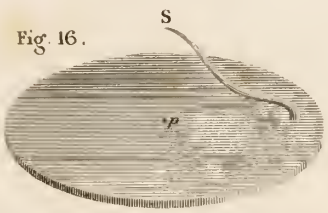


Fig. 15.

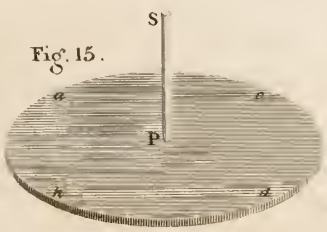
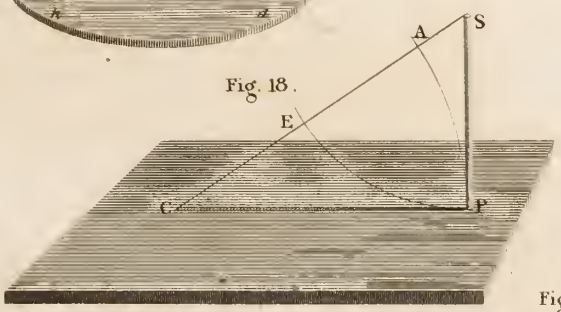


Fig. 18.



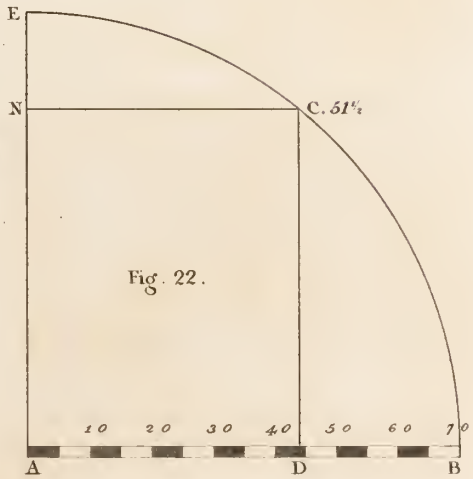


Fig. 22.

Fig. 19.

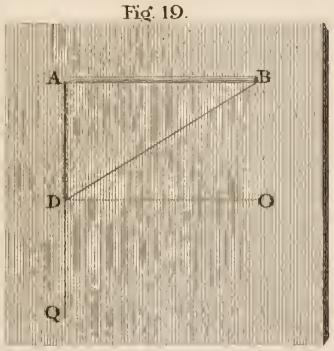
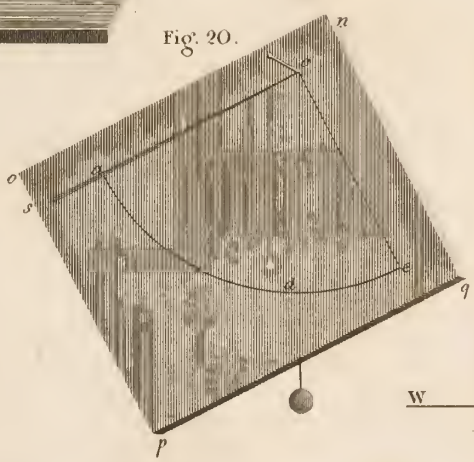


Fig. 20.



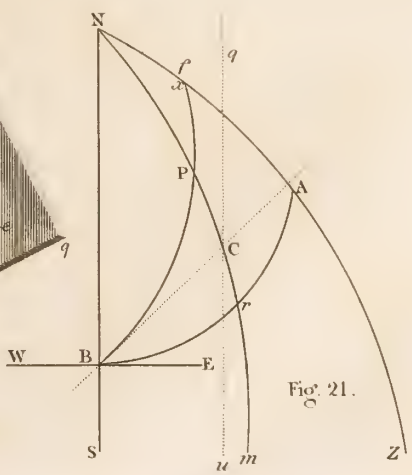


Fig. 21.

between all the three places B, C, and A: For the angle *q* C A would be the same with the angle N B A; and thus A would still bear north-east from C and from B.*

But the earth being of a spherical figure and the meridians meeting in the poles, the meridian of B on the globe being brought to the zenith is N S; the meridian of C is the curve line N C *m;* and the meridian of A is the curve line N A Z; all which meet in N the north pole. Now though the straight line B C A shews the angle of position between the three places B, C, and A, as B stands on the globe at the zenith, yet the line B C A does by no means make the same angles, or has the same bearing with the curve line N C *m*, which is the meridian of C, as it does with N S, which is the meridian of B: And it still makes more different angles with the curve line N A Z, which is the meridian of A.

Thence it follows, that all the rhumb lines must be a sort of spiral lines on the globe, except the north and south, which is the meridian, and the equator with its parallels of east and west, which are circles.†

The north-east line in this place must be B P *x*, still gradually inclining toward the several meridians, that so it may make the same angles with the meridians N C *m* and N A Z, as it does with N B S.

But by this means you see, that to steer or travel still to the north-east would bring you down to P and *x*, not to C and A.

You see also, that the course you must steer or travel to come to A will be represented by the line B *r* A, which is much nearer the east point.

But this is something too laborious and painful for every reader to trouble his thoughts with.

Problem XI. Having the day of the month given, to find the sun's place in the ecliptic.

Find the day of the month in the calendar on the horizon, either old style or new, which soever is required, lay a flat rule on the day of the month, and over against it on the inner edge of the horizon, will appear both the sign in which the sun is, and the degree of that sign; as on the 10th of May, Old Style, the sun is just entering into the first degree of *gemini*, which you may find in both the globes on the ecliptic circle; and there you may also compute the longitude of the sun from the point *aries* if you please.

Problem XII. The day of the month being given, to find those places of the globe where the sun will be vertical, or in the zenith, that day.

Find out the sun's place in the ecliptic circle: Bring it to the meridian; mark the degree over it: Then turn the globe round, and all those places that pass under that degree will have the sun in their zenith that day.

* And for this reason in those sea-charts where the points of the compass or rhumbs are drawn in straight lines quite through the chart, the meridians or lines of longitude are all made straight and parallel lines: For if the meridians were a little curved as they are commonly in maps, the rhumbs could not be drawn through the chart in straight lines. See Sect. XI. Of Sea-Charts.

† All the other lines of east and west, besides the equator, are parallels of latitude, and are lesser circles. And though the line of east and west in this figure be, for the ease of a young learner, represented in a straight line, because it is a parallel to the equator, and if drawn round the globe would be a perfect circle and run into itself, yet it should more properly be so far curved, as to cut all the side-meridians N *m* and N Z at right angles, as well as the meridian of the place N S. And thus they are commonly drawn in maps of the world, wherein there is no line of east and west drawn straight besides the equator.

Problem XIII. The day and hour of the day at one place, *viz.* London, being given, to find at what other place the sun is vertical at that hour.

The sun's place for that day being brought to the meridian, and the degree over it, *i. e.* the declination, being observed, bring the first place, *i. e.* London, to the meridian. Set the hour index to the given hour; and turn the globe till the index come to the upper 12, that is 12 at noon, then the place of the earth that stands under the observed degree of the meridian has the sun at that moment in the zenith.

Problem XIV. The day and hour at one place, *viz.* London, being given, to find all those places of the earth where the sun is then rising, setting, or on the meridian, which is called *culminating*, also where it is day-light, twilight, or dark night.

By the foregoing problem, find the place where the sun is vertical at the hour given: Rectify the globe for the latitude of that place; bring that place to the meridian.

Then all those places that are in the west semicircle of the horizon have the sun rising, for it is 90 degrees from their zenith.

Those in the east semicircle of the horizon have it setting, for it is 90 degrees past their zenith.

To those who live under the same line of longitude, or upper meridian, it is noon, if they have any day at that time,

To those who live under the opposite line of longitude, or lower meridian, it is midnight, if they have any night at that time.

Those places that are above the horizon, have the sun above their horizon so many degrees as the places themselves are.

Those places that are under the horizon, but within 18 degrees, have twilight.

And with those who are lower than 18 degrees, it is dark night.

Problem XV. A place being given in the torrid zone, to find those two days in which the sun shall be vertical there.

Bring the place to the meridian; mark the degree over it, which is its latitude; move the globe round, and observe those two opposite points of the ecliptic that pass through the aforesaid degree; search on the wooden horizon on what two days the sun passes through these two points of the ecliptic, for then the sun at noon will be in the zenith of the place given.

Problem XVI. A place being given in one of the frigid zones, suppose the north, to find when the sun begins to depart from, or to appear on that place, how long he is absent, and how long he shines constantly upon it.

Suppose the place given be the north cape of Lapland, 71 degrees of latitude. Rectify the globe for that place, or elevate the pole 71 degrees; then turn the globe till the descending part of the ecliptic, the meridian, and south point of the horizon, meet together: Thus the ecliptic will shew, that the sun toward the end of *scorpio*, that is, a little after the middle of November, goes below the horizon entirely and leaves that part of Lapland.

Then turn the globe a little farther, till the ascending part of the ecliptic meet the meridian in the same south point of the horizon, and it will shew that about the ninth or tenth degree of *aquarius*, that is, about the end of January, the sun begins to rise above their horizon. Thus they are at least two months without the sun in winter.

In like manner bring the ascending part of the ecliptic to meet the meridian in the north point of the horizon, there you will find that the sun begins to be entirely above their

horizon toward the end of *taurus*, or near the middle of May; and if you turn the globe a little farther, the descending ecliptic will meet the meridian and horizon in the north, at the 8th or 9th degree of *leo*, or about the beginning of August: Thus it appears that those Laplanders will have the sun at least two months above their horizon in summer, or two months of complete day-light.

Problem XVII. To find the sun's declination and right ascension any day in the year: Suppose the twenty-first of May.

Find out the sun's place for that day, or the beginning of the first degree of *gemini* on the ecliptic; bring that point of the ecliptic to the meridian, and the degrees numbered on the meridian will shew the sun's declination, *viz.* 20 degrees northward.

At the same time the place where the meridian cuts the equator will shew the right ascension of the sun, or its distance from the point *aries* on the equator, *viz.* 58 degrees. It is marked usually in degrees on the globe; if you would turn it into hours, divide it by 15, and it amounts to three hours $\frac{13}{15}$, which is 52 minutes.

Note, That any star's declination and right ascension are found the same way, by bringing it to the meridian.

Remember, the sun's declination is always north in our summer half-year, from the 21st of March, and southward in our winter half-year, from the 23d of September.

Problem XVIII. To rectify the globe for the sun's place, any day in the year, and thus to represent the face of the heavens for that day.

Bring the sun's place found on the ecliptic of the globe to the meridian; and at the same time set the hour index or pointer of the dial to the upper 12, that is, to noon.

Note, When the globe is thus rectified for the latitude of the particular town or city, by Problem VII. and for the zenith of it, by Problem IX. and for the sun's place in the ecliptic that day, by this Problem XVIII. it is then fitted to resolve most of the following problems, for then it most exactly represents the real face and state of the heavens for that day.

Here let it be observed, that this practice does really represent the face of the heavens only for that day at noon, when the astronomers' day begins, and not for all the following hours of the day; because the sun is every moment changing his place a little in the ecliptic. But it is customary, and it is sufficient for learners, to make this go for a representation of the heavens for all that day, to perform any common operations.

Problem XIX. The place and day being given, *viz.* May 10th, at London, to find at what hour the sun rises or sets, his ascensional difference, his amplitude, the length of day and night.

Rectify for the latitude, and for the sun's place, then bring the sun's place down to the eastern part of the horizon, and the index will shew the time of sun-rise on the dial, *viz.* five minutes after four in the morning. Bring the sun's place to the western side of the horizon, and the dial will shew the hour of sun-setting, *viz.* five minutes before eight at night.

Thus his ascensional difference will appear, that is, how long he rises or sets before or after six o'clock, which is one hour and 55 minutes

Thus also his amplitude will appear in the horizon to be almost 34 degrees to the north of the east.

The hour of the sun's rising doubled gives the length of the night, *viz.* eight hours

and ten minutes; and the hour of the sun's setting doubled gives the length of the day, which will be 16 hours wanting 10 minutes, *i. e.* 15 hours 50 minutes.

Problem XX. The place and day being given, to find the altitude of the sun at any given hour.

Rectify for the latitude, for the zenith, and for the sun's place: Bring the quadrant of altitude under the meridian, and it will meet the sun's place in the meridian altitude of the sun that day, and thus shew how high it is at noon.

Turn the globe till the index point to any other given hour on the dial, then observe where the sun's place is, bring the quadrant of altitude to it, and it will shew the sun's altitude at that hour: Thus, May 10th, at London, the sun's meridian altitude will be a little above $58\frac{1}{2}$ degrees, and at nine o'clock in the morning will be $43\frac{1}{4}$.

Problem XXI. The place and day being given, to find the azimuth of the sun at any given hour.

Rectify the globe for the latitude, the zenith, and the sun's place: Then turn the globe till the index point to the hour given; then observe the sun's place; bring the edge of the quadrant of altitudes down upon it, and it will cut the horizon in the azimuth of the sun, or shew what point of the compass the sun is in. Thus, May 21st, at 20 minutes past nine in the morning, the sun's azimuth will be about 60 degrees from the south toward the east, that is, near south-east and by east.

Problem XXII. The sun's altitude being given at any certain place and day, to find the hour of the day and also his azimuth.

Rectify as before for the latitude, the zenith, and the sun's place: Turn the globe, and move the quadrant of altitudes so that the sun's place may meet the degree of altitude given on the quadrant, then the index will shew the hour on the dial; and the quadrant of altitudes will cut the azimuth on the horizon. Thus, May 21st, in the morning, if the altitude be near 46 degrees, the azimuth from the south will be 60, and the hour 20 minutes past nine.

Here note, That to find the sun's hour, or azimuth, by his altitude, you should never seek it too near noon, because then the altitude alters so very little for two hours together.

Problem XXIII. When the sun is due east or west in summer, how to find the hour, and his altitude.

Rectify as before; then bring the quadrant to cut the east or west point of the horizon, and turn the globe till the sun's place in the ecliptic meet the edge of the quadrant. Thus the quadrant will shew the altitude, and the index will point to the hour: Thus, May 21st, in the afternoon, the sun will be due west at about 56 minutes past four; and its altitude will be near 26 degrees. This is called the vertical altitude by some writers.

Thus if the place and day be known, and either the hour, the azimuth, or the altitude be given, you may easily find the other two.

Problem XXIV. To find the degree of the depression of the sun below the horizon, or its azimuth, at any given hour of the night.

Observe the place of the sun, suppose May 21st, in the first degree of *gemini*, then seek his opposite place in the ecliptic at half a year's distance, *viz.* the first degree of *sagittarius*, on the 23d of November; this being done, seek the altitudes, the azimuths,

and the hours, just as you please, for that day, and they will shew you what are the sun's depressions, azimuths, and hours, on the 21st of May at night.*

Problem XXV. To find how long the twilight continues in any given place and given day, suppose the 21st of May, at London, both at morning and evening.

The way to answer this question is to seek how many hours or minutes it will be after sun-set before the sun be depressed 18 degrees below the horizon in that place on the 21st of May: And so before sun-rise for the morning twilight. This is best performed by seeking how long it will be after sun-rise, or before sun-set, on the 23d of November, that the sun will have 18 degrees of altitude, which is done by the foregoing problem.

Note, That from the 26th of May to the 18th of July, at London, there is no dark night, but constant twilight: For during this space the sun is never depressed above 18 degrees below the horizon.

Problem XXVI. To know by the globe the length of the longest and shortest days and nights, in any place of the world.

Remember, that the sun enters the first degree of *cancer* on the longest day, at all places on the north side of the equator, and the first degree of *capricorn* on the south side: Also remember, that he enters the first degree of *capricorn* the shortest day in all places of the northern hemisphere, and the first degree of *cancer* in the southern: Then rectify the globe for the latitude and sun's place, and find the hour of sun-rising, which doubled shews the length of the night: And the hour of the sun-setting doubled shews the length of the day, as in Problem XIX.

Problem XXVII. The declination and meridian altitude of the sun, or of any star, being given, to find the latitude of the place.

Mark the point of declination on the meridian, as it is either north or south from the equator; then slide the meridian up and down in the notches, till the point of declination be so far distant from the horizon as is the given meridian altitude. Then is the pole elevated to the latitude sought.

Thus where the sun or any star's meridian altitude is $58\frac{1}{2}$ degrees, and its declination 20 degrees northward, the latitude of that place will be $51\frac{1}{2}$ degrees north. See more Problem VII. VIII. IX. Sect. XX.

Note, There are some few problems which relate to the sun and to the hour, which may be performed on the globe when the sun shines, though not with any great exactness, yet sufficient for demonstration of the reason of them, as follows.

Problem XXVIII. The latitude of a place being given, to find the hour of the day in the summer, when the sun shines.

Set the frame of the globe upon a plane perfectly level or horizontal, and set the meridian due north and south; both which are difficult to be done exactly; even though you have a mariner's compass by you: Then rectify the globe for the latitude, and the iron pin of the pole will cast a shadow on the dial and shew the true hour. For when the globe is thus placed, the dial plate, with the pole in the centre of it, is a true equinoctial dial for our summer half-year, when the sun is on the north side of the equator.

* *Note*, The reason why we use the opposite part of the globe, to find the degrees of depression of the sun, is because the wooden horizon is so thick that we cannot conveniently see, observe, or compute the distance of depression from the upper edge of it, which edge is the true representative of the real horizon.

The same may be also done in the winter half-year, by depressing the north pole as much below the south part of the horizon as is equal to the latitude of the place; for then the dial plate is a proper equinoctial dial for the winter half-year: But this is not so commodiously performed, though the reason of it is the same as the former.

Problem XXIX. To find the sun's altitude, when it shines, by the globe.

Set the frame of the globe truly horizontal, or level; turn the north pole to the sun: Move the meridian up and down in the notches till the axis cast no shadow; for then it points exactly to the sun, and then the arch of the meridian between the pole and the horizon shews the sun's altitude.

Problem XXX. The latitude and day of the month being given, to find the hour of the day when the sun shines.

Let the globe stand on a level, and the meridian due north and south; rectify the globe for the latitude and for the sun's place; stick a needle perpendicular to the sun's place on the globe; turn the globe about till the needle point directly toward the sun, and cast no shadow; then will the index shew the hour of the day.

I proceed now to shew some problems to be performed by the stars upon the heavenly globe.

Problem XXXI. The place being given, to find what stars never rise or never set in that place.

Rectify the globe for the latitude; turn it round, and observe that such stars as do not go under the horizon during its whole revolution, do never set in the place given; and such stars as rise not above the horizon of the globe during its whole revolution, they never rise in the place given, nor are ever seen by the inhabitants thereof: So the *Little Bear*, the *Dragon*, *Cepheus*, *Cassiopea*, and the *Great Bear*, never set at London, and many of the southern constellations never rise.

Problem XXXII. The place and day of the month being given, to represent the face or appearance of the heavens, and shew the situation of all the fixed stars at any hour of the night.

Set the globe exactly north and south: Rectify it for the latitude, and for the sun's place; then turn the globe till the index points to the given hour. Thus every star on the globe will exactly answer the appearance of the stars in the heavens; and you may see what stars are near or on the meridian, which are rising or setting, which are on the east or west side of the heavens. Thus, October 24th, at 10 o'clock at night, the glorious constellation *Orion* will appear on the east side at London, the star *Regel* in the left knee, or foot, of *Orion*, just above the horizon, the three stars in his girdle a little higher, &c. This represents the face of the heavens at night, as Problem XVIII. does in the day.

Note, This problem is of excellent use to find out and know the several constellations, and the more remarkable stars in each constellation.

Here follow several problems to find the hour of the night by the stars.

Problem XXXIII. Any star on the meridian being given, to find the hour of the night.

In order to find what stars are upon the meridian at any time, it is good to have a meridian line drawn both in a north and in a south window; that is, a line pointing exactly to the north and south: Then set up a broad smooth board of 20 or 24 inches high, and eight or ten inches broad; place it perpendicular on the window, with its lower

edge on, or parallel to the meridian line, and fixing your eye at the upright nearest edge of the board, and glancing along the plain face of it, you will easily observe what stars are on the meridian, either north or south, at that time.*

Having found what star is on the meridian, rectify the globe for the latitude, and for the sun's place that day; then bring the centre of the star which is on the meridian in the heavens, to the edge of the brazen meridian of the globe; and the index will shew the time of night on the north side of the dial, among the evening, or midnight, or early morning hours.

Note, How to draw a meridian line, see Section XX. Problem XXII. &c.

Problem XXXIV. The azimuth of any known star being given, to find the time of night.

The method I just before proposed will easily find the azimuth of any star. Set this tall flat board perpendicular on the window, with one end of it upon the meridian line drawn there, so as that your eye may just see the star in the very edge of the plane of this board; then a line drawn on the window by the foot of the board will cross the meridian line in the true angle of its azimuth, or its distance from the north or south.

Having found the azimuth of the star, rectify the globe for the latitude, and for the sun's place, as before; rectify it also for the zenith, and bring the quadrant of altitudes to the azimuth of the star in the horizon; then turn the globe till the graduated edge of the quadrant of altitudes cut the centre of that star, and the index will shew the hour of night upon the dial plate.

Note, That if you have a meridian line drawn on a window, you may find, by such methods as these, when the sun is in the meridian, and what is its azimuth at any time.

Problem XXXV. The altitude of a star being given, to find the hour of the night.

Note, That the altitude of the star must be found by a quadrant, or some such instrument: But remember, that if you would find the hour by the altitude of a star, you must never choose a star that is too near the meridian; because, for almost two hours together, the altitude varies very little when it is near the meridian.

Rectify the globe as before for latitude, zenith, and sun's place; move the globe and the quadrant of altitudes backward or forward, till the centre of that star meet the quadrant of altitude in the degree of altitude which is given, then the index will point to the true hour.

Note, These three last problems being well understood, will shew you how to find at what hour any star will rise or set any day of the year; what stars are or will be upon the north or south meridian at any hour given; what stars are in the east or the west, or on any points of azimuth at any time of the night; and what altitude they have at that hour, or at that azimuth.

Problem XXXVI. To find the latitude and longitude of any star: Also, its right ascension and declination.

Put the centre of the quadrant of altitudes on the proper pole of the ecliptic, whether it be north or south; bring its graduated edge to the given star; then that degree on

* *Note*, To set the board perpendicular and convenient, it is fit to have a foot made to it behind, that it may stand firm. And let a straight line be drawn from the top to the bottom of the board, through the middle of it, parallel to the sides: Fix also a pin in the upper part of this line, near the top of this upright board, on which hang a thread and plummet, to play loose in a hole near the bottom, to keep it perpendicular. Then the thread hanging almost close to the board will direct your eye to the stars on the meridian.

the quadrant is the star's latitude; and the degree cut by the quadrant on the ecliptic is the star's longitude. Thus the latitude of *Arcturus* is 31 degrees north: Its longitude is 200 degrees from the point *aries*, or 20 degrees from *libra*. The latitude of *Sirius*, or the *Dog Star*, is near 40 degrees of south latitude, and its longitude is about 100 degrees from *aries*, or 10 degrees from *cancer*.

To find a star's right ascension and declination, see Problem XVII. for it is done the same way as that of the sun; only observe this difference, that the sun changes both his right ascension and his declination every day, whereas the fixed stars have the same right ascension and declination all the days in the year.

Remember also, that the fixed stars, every day in the same year, keep the same longitude and latitude, as well as the same right ascension and declination;* but the planets are ever changing all these, and the learner can know none of them but by some almanacs which are called *Ephemerides*, or tables which are calculated on purpose to shew the longitude and latitude, or the place of the several planets among the twelve signs of the zodiac, every day in the year.

Problem XXXVII. To find the place of any planet on the globe: Also to find at what hour any planet, suppose *Jupiter*, will rise or set, or will be upon the meridian, any given day of the year.

You must first find out, by some ephemeris, what degree of what sign *Jupiter* possesses that day of that year: Mark that point on the ecliptic, either with chalk, or with a pencil, or by sticking on a little black patch; and then, for that day, and that night, you may perform any problem by that planet, in the same manner as you did by a fixed star.

But, if you would be very exact, you must not only seek the planet's place in the sign for that day, which is its longitude, but you must seek its latitude also in the ephemeris, which, indeed, in the superior planets, *Jupiter*, *Saturn*, *Mars*, alters but very little, for whole months together, and thus set your mark in that point of latitude, or distance, from its supposed place in the ecliptic, whether northward or southward, and then go to work your problem by this mark.

I shall give but one instance, which will sufficiently direct to solve all others of the same kind that relate to the planets.

On the 14th of April, 1723, I find, by an ephemeris, that the sun is about the end of the 23d degree of *aries*, *Jupiter* enters the 8th degree of *capricorn*, and, if I would be very exact, I observe also, that the latitude of *Jupiter*, that day, is 15 minutes, or a quarter of a degree to the north: There I make a mark, or put on a small black patch on the globe, to stand for Jupiter. Then having rectified the globe for the latitude, *viz.* of London, and for the sun's place, April the 14th, I turn the mark which I made for *Jupiter*, to the eastern edge of the horizon, and I find *Jupiter* will rise near the south-east, at a little past one in the morning: He will come to the meridian at a very little past five: He will set near the south-west, about nine in the morning.

Then, if I rectify the globe for the zenith, the quadrant of altitudes being brought down to the horizon, will tell you what is his altitude, and what his azimuth, at any given hour of the morning, by the help of the dial and index.

Or, his altitude or azimuth being given, you may find what it is o'clock.

* The insensible change of the longitude, right ascension, and declination of the fixed stars, made by their slow motion, parallel to the ecliptic, is not worth notice in this place.

By this means you may find the hour when the moon will rise and set, together with her southing, or the time of her coming to the meridian. But let it be noted, that the moon changes her place in the zodiac so swiftly, that she moves through 13 degrees of one sign every day, or thereabout; and, therefore, you cannot find the precise hour and minute of her rising, setting, southing, &c. upon the globe, without much more trouble than most of the other planets will give you, which change their places in the zodiac much more slowly.

Problem XXXVIII. The day and hour of a solar eclipse being known, to find all those places in which that eclipse will be visible.

By the 13th Problem find out at what place the sun is vertical at that hour of the day. Bring that place to the pole or vertical point of the wooden horizon, that is, rectify the globe for the latitude of that place; then, the globe being in that situation, observe what places are in the upper hemisphere; for if it be a large eclipse the sun will be visibly eclipsed in most of them.

Problem XXXIX. The day and hour of a lunar eclipse being known, to find by the globe all those places in which the same will be visible.

By Problem XIII. find, as before, at what place the sun is vertical at that hour; then by Problem IV. find the antipodes of that place: Rectify the globe for the latitude of those antipodes; thus they will be in the zenith, or in the pole of the horizon; then observe, as before, what places are in the upper hemisphere of the globe, for in the most of those places the moon will be visibly eclipsed.

The reason of rectifying the globe for the antipodes in this problem, is because the moon must be directly opposite to the sun whensoever she is eclipsed.

SECTION XX.

PROBLEMS RELATING TO GEOGRAPHY AND ASTRONOMY, TO BE PERFORMED BY THE USE OF THE PLAIN SCALE AND COMPASSES.

IT is supposed that the reader is already acquainted with some of the first and easiest principles of geometry, before he can read with understanding this or any other treatise of astronomy or geography; and it is presumed also that he knows what is a *chord*, a *tangent*, and a *sine*, and how to make and to measure an angle either by a line or scale of chords, or sines or tangents, in order to practise the problems of this last section; though a very slight knowledge of these things is sufficient for this purpose.

Because several of the following problems will depend upon the altitude, or azimuth of the sun, and in order to obtain these, we sometimes use a pin or needle fixed perpendicularly, on an upright or horizontal plane; therefore, the first problem I propose shall be this, *viz.*

Problem I. How to fix a needle perpendicular on a plane, or to raise a perpendicular style or pointer in order to make observations of a shadow.

Note, Any thing fixed or set up to cast a shadow is called a *style*.

One way to perform this is by having at hand a joiner's square, and while one edge of it is laid flat to the plane, the other edge of it standing up will shew when a needle or style is fixed on that plane perpendicularly, if it be applied to the side of the needle.

Note, If you have a little square made of box or any hard wood, one leg being six, and the other eight or nine inches long, one inch or $1\frac{1}{2}$ broad, and an inch thick, with a thread and plummet hanging from the end of one leg, down toward the place where the other leg is joined, as in *Figure* 14, and a large hole for the plummet to play in; it will be of use not only to shew you how to erect a needle truly perpendicular; but it will also discover whether any plane be truly smooth, and be horizontal or level, as well as whether any upright plane be exactly perpendicular to the horizon.

Such a square will also be very useful in the practice of any geometrical problems, by drawing one line perpendicular to another with the greatest ease.

Another way to fix a needle perpendicular to any plane is this: Describe a circle, as *a*, *o*, *d*, *h*, in *Figure* 15. Fix a needle, *s p*, in the centre *p*, then measure from several opposite parts of it, as, *a*, *o*, *d*, *h*, to the tip of the needle *s*, and fasten the needle so as that the tip *s*, shall be at equal distance from all those points, then it is truly perpendicular.

Note here, That in most of these practices where a perpendicular needle is required, the same end may be attained by a needle or wire, straight or crooked, which may be called a style, set up sloping at random, as in *Figure* 16, without the trouble of fixing it perpendicular, if you do but find the point *p* on the plane, which lies perpendicularly under the tip of the style *s*, and this may be found by applying the edge of the square, described *Figure* 14, to the tip of the style: Though there are other ways to find this perpendicular point, for nice practices in dialling, by shadows, which require great exactness.

But take notice here, that if you use this method of a style set up sloping at random, as in *Figure* 16, then with your compasses you must measure the distance from the tip of the style *s*, to the point *p*, and that distance must be counted and used as the length of the perpendicular style *s p* in *Figure* 15, wheresoever you have occasion to know or use the length of it.

Observe also, that if the tip of your style, whether straight or crooked, be more than three or four inches high from the plane, you will scarce be able to mark the point of shadow exactly, because of the penumbra, or faint shadow, which leaves the point or edge of a shadow undetermined.

On a horizontal or level plane you must use a much shorter style when the sun is low, or in winter, because the shadow is long; but in the longest days in summer a four inch style is sufficient, though the shadow at that season be very short all the middle hours of the day. From the tip of the style to the tip of the shadow should never be above six inches distance.

After all, if you have frequent occasion for a perpendicular style to observe a shadow by it, I know nothing easier than to get a small prism of wood, or ivory, or rather of brass, such as is described *Figure* 17. Let the base be a right-angled triangle A B C; the line B C an inch; A B two inches; and let the height of the prism, *viz.* A D or C E, be three inches, or near four inches if you please. By this means you obtain three perpendicular styles of different lengths, according as you want the shadow to be either longer or shorter in summer, or in winter.

If you set it upon the square side A B D O, your perpendicular style will be B C or O E; if it be B O, then C is the tip of the style, and B marks the point on the plane. If you set it on the square side B C O E, as it stands in the figure, then A B, or D O

is your perpendicular style. Or if you set it on its triangular base A B C, then either A D, or B O, or C E, will be your perpendicular style.

This little plain prism has these great advantages in it, *viz.* That you can set it up in a moment on a perfectly smooth plane, and you are sure it is perpendicular to the plane; and then if you require it to stand there any time, and it should happen to be moved, if you have but fixed and marked its place by the lower edges on the plane, and remember which edge you designed for the style, you may set it exactly in the same position again.

Problem II. How to take the altitude of the sun by a needle fixed on a horizontal plane, or by any perpendicular style.

In all these practices be sure that your plane be truly level or horizontal, which you cannot well know without some such instrument as I have described before, *Figure* 14, which serves instead of a level.

You must apply this instrument or square not only to one part, but to every part of the plane, wheresoever you can imagine the shadow will fall, to see if it be precisely horizontal or level; for a very small variation from the level will cause a great difference in the length and in the point of shadow; and upon this account there are few window-stools, or any boards or posts fixed by the common work of carpenters, sufficiently level for a just observation in astronomy or dialling.

Fix your perpendicular style P S, as in *Figure* 18, observe the point of shadow C cast from the tip of the style S; draw P C: Then take the height of the style P S in your compasses; set it perpendicularly on P C; draw the line S C on the plane, and the angle C is the sun's altitude, *viz.* 35 degrees.

Here it is evident that if you suppose C the centre, and C P to be the radius, then P S is the tangent of the altitude 35 degrees; for it measures the angle C or the arch P A. But if you make S the centre, and suppose S P to be the radius of a circle, C P is the tangent of the co-altitude of the sun, *viz.* 55 degrees, for it is that tangent which measures the angle S or the arch P E.

Hence it will follow that if you fix a perpendicular needle, pointer, or style, on any horizontal plane, and divide a line, as P C, according to the scale of tangents, whose radius shall be P S, beginning at P towards C, and make this line of tangents moveable round the centre P, the shadow of the style will shew you the co-altitude of the sun at any time on that moveable scale of tangents.

Or if the scale of tangents P C be divided on the immoveable horizontal plane itself, and you describe concentric circles on the centre P through every degree of that scale, the shadow of the tip of the style will shew the co-altitude among those circles; for they will exactly represent the parallels of altitude in the heavens.

Note, This is described thus particularly rather for demonstration than use, because when the sun is low, the shadow P C will be extended many feet or yards.

Problem III. To take the altitude of the sun by a style on a perpendicular or upright plane.

Fix your style A B perpendicular to a flat board, as *Figure* 19, raise your board exactly upright, and turn it to the sun, so that the shadow of the style A D may be cast downward directly perpendicular from the centre A in the line A Q. Then take the length of the style A B in your compasses, and set it on the board at right angles to the

line of shadow, from A to B: Draw the line B D; and the angle A D B shall be the sun's co-altitude, or zenith distance as it is sometimes called, *viz.* 55 degrees; the tangent of which is A B to the radius D A, and the angle A B D, which is the complement of it, or 35^{d}. shall be the sun's altitude; the tangent of which is A D to the radius B A.

Or, to make this more evident, draw the obscure line D O parallel to A B, *i. e.* horizontal, and the angle B D O will plainly appear to be the angle of the sun's altitude 35 degrees.

Hence it will follow, that if the line A D be prolonged to Q and divided according to the degrees of a scale of tangents, this board or instrument will be always ready to shew the sun's altitude on that scale, by the shadow of the style A B turned directly to the sun, when the board is held up and made to stand perpendicular to the horizon.

Note, This is the foundation of those dials which are made on moveable columns, or on walking canes, which shew the hour of the day by the different altitudes of the sun in the various seasons of the year.

Note, There are several other ways to find the altitude of the sun by a moveable or immoveable upright plane, and a perpendicular style fixed on it. But none of those ways of taking an altitude by the point or end of the shadow are the most commodious and exact for common use; I have chiefly mentioned them to lead the learner into a more familiar and perfect acquaintance with the nature and reason of these operations.

If no regular instrument be at hand to take the sun's altitude, I prefer the following method above any others:

Problem IV. To find the sun's or any star's altitude by a plain board, thread, and plummet.

Take a smooth flat board, as *n o p q*, which is at least eight or nine inches broad every way, see *Figure* 20. Mark two points on it, as *a c*, at least at seven or eight inches distance, and draw that line. Fix a very short pin *c* perpendicular, which may be done sufficiently true by guess. Hang a thread and plummet on it. Hold up the edge of the board to the sun till the shadow of the pin be cast all along the line *a c*. Observe where the thread falls; mark a point in it, as at *d;* draw the line *d c*, and the angle *a c d* is the complement of the sun's altitude: Or you may draw the whole quadrant *a c e*, and then the angle *d c e* is the sun's altitude. Now if the arch *d e* be measured by a line of chords, you find the number of degrees.

Note, That the degrees of altitude must always be reckoned from that side of the quadrant which is held next to the sun, *viz. c e*, the co-altitude from the side *c a*.

Note further, That the sun's altitude should scarce ever be taken within half an hour of noon for any other purposes beside the finding of the meridian altitude; because for an hour together the altitude then increases or decreases so very little, the sun being then near the middle of its diurnal arch.

Take notice also, That when the sun is near the horizon it appears higher than really it is by reason of the refraction or breaking of its rays in passing through a larger space of atmosphere or thicker air. When the sun is one degree high its refraction causes it to appear near half a degree higher than it is. At two degrees high the refraction is twenty minutes, at three degrees the refraction is fifteen minutes, at five degrees the refraction is ten minutes, at ten degrees the refraction is five minutes. You must therefore allow proportionably by deducting so much from the apparent altitude when you make an observation near sun-rise or sun-set.

Note again, That the heavier your plummet is, the more steady it will hang, and make the observation more exact.

If you please you may draw the whole quadrant on the board, and stick in the pin at the centre before you make your observation, which indeed is the most proper way.

You may find the altitude of the moon the same way. And the altitude of any star may be found by the same board, if you stick in another very short pin, perpendicular at *a*, and fixing your eye at *s*, bring both the pins, *a* and *c*, just over the star; then the thread will hang (suppose) on the point *d* in the arch, and shew the degree or angle of altitude to be *d c e*.

Problem V. To observe the meridian altitude of the sun, or its height at noon: And by the same method to find any star's meridian altitude.

If you know exactly when it is noon, take the altitude of the sun, by any instrument, within a minute or two of that time, and that is the meridian altitude; for two or three minutes at noon make no sensible difference in the altitude.

But if you have no clock, or dial, or any thing of that kind whose truth you can rely on, then, a little before noon, observe, and set down the altitude every four or five minutes, till you find it begins to grow a little less, then review your observations, and the greatest height was the true meridian altitude.

You may, by the same method, find the meridian altitude of any star above the horizon, if you make several observations, when the star is coming near to the north or south part of the meridian.

Problem VI. How to find out the declination of the sun, or of any large or known star.

If you know the latitude of the place where you are, with the meridian altitude of the sun any day in the year, or if you know the sun's place in the ecliptic, you may find the declination of the sun thereby geometrically, as shall be shewn afterward: But if these are not known, then in order to other astronomical operations, you must seek the declination of the sun for that day, either by the globe on the brazen meridian; or in a scale of the sun's declination, which is drawn on artificial quadrants, or other mathematical instruments; or it may be found in tables of the sun's declination calculated exactly to every minute of a degree for every day in the year, which is the best way, where it may be had.

There are also tables of declination of several of the most noted stars. These are all the year at the same distance from the equator, and their declination does not vary, as the sun's does.

These tables of the sun's and star's declination are found at the end of this book, Sect. XXI.

But let it be noted here, that the declination of the sun not only changes every day in the year, but it differs also, some few minutes, in the next year, from the year foregoing, even on the same day of the month: Whence this difference arises, and how to act with respect to it, see Problem XX. following, and more in Sect. XXI.

Problem VII. To find the latitude of any place by the meridian altitude and declination of the sun any day in the year.

The way to find the latitude of any place, *i. e.* the distance of the zenith of that place from the equator, by the meridian altitude of the sun, is first to seek its colatitude,

i. e. the complement of its latitude, or, which is all one, the elevation of the equator above the horizon of that place. Suppose the day given be the 22nd of June, or the summer solstice.

This may be done by looking back to the *Figure* 3. First, Draw the line H O for the horizon, and from the centre C raise a perpendicular C Z to represent the zenith. Make the semicircle H Z O for the meridian: Then suppose the meridian altitude of the sun at the summer solstice be 62 degrees, by the use of your compasses and a scale of chords set up 62 from H to S: Also the declination of the sun that day, being $23\frac{1}{2}$ degrees northward, set $23\frac{1}{2}$ from S downward, and it will find the point E, and the arch H E is the altitude of the equator above the horizon, or the colatitude of the place, *viz.* $38\frac{1}{2}$ degrees: Thence you find the latitude is E Z or $51\frac{1}{2}$ degrees which completes a quadrant. Then if you draw the line E C, it will represent the equator in that scheme.

Suppose you take the meridian altitude of the sun on either of the equinoctial days, *viz.* in March or September, and you find it to be $38\frac{1}{2}$ degrees: Set up $38\frac{1}{2}$ from H to E, then, the sun having no declination, the meridian altitude itself shews you the height of the equator above the horizon, which is the complement of the latitude.

Suppose the meridian altitude of the sun at the shortest day be 15 degrees, set up 15 from H to V: Then the sun's declination is $23\frac{1}{2}$ degrees southward: Therefore set $23\frac{1}{2}$ from V upward, and it finds the point E: And the arch H E is the complement of the latitude as before, *viz.* $38\frac{1}{2}$ degrees.

For all these practices, the chief rule is this: In the summer half-year set your declination downward from the point of the meridian altitude, and it will find the equator's height above the horizon. In winter, set your declination upward from the point of the meridian altitude, and it will shew you the height of the equator. The reason of it is most evident in the third and fourth figures.

It may be proper, in this place, to recollect what I have already demonstrated in Sect. V. *Figure* 4. that the latitude of any place, that is the distance of its zenith from the equator, Z E is equal to the elevation of the pole P O above the horizon. Thereby it appears that the elevation of the equator above the horizon of that place on one side as E H, which is the complement of the latitude, is equal to the complement of the pole's elevation on the other side as Z P. If, therefore, the latitude, suppose of London, be E Z, or P O $51\frac{1}{2}$, the colatitude P Z or H E will be $38\frac{1}{2}$ for it must complete a quadrant or 90 degrees; and therefore if you set the point P $51\frac{1}{2}$ degrees above O on the other side of the horizon, and draw the line P C, you have the axis of the world represented, or the north pole in its proper elevation for London, and standing, as it ought, at right angles with the equator E C.

I have represented the solution of this sixth problem in a geometrical manner to shew the reason of this practice; but this problem of finding the latitude by the meridian altitude is much easier performed arithmetically thus:

In the winter half-year, add the declination to the meridian altitude, and it gives you the colatitude.

In the summer half-year, subtract the sun's declination from the meridian altitude, and it gives the colatitude.

Example, June the twenty-second.

Meridian altitude	H S———62	Subtract
Sun's declination	E S———23½	
Colatitude	H E —— 38½	

December the twenty-second.

Meridian altitude	H V———15	Add
Sun's declination	E V———23½	
Colatitude	H E———38½	

Then if you subtract the colatitude from the zenith or 90, you find the latitude, as,

Zenith	H Z———90	Subtract
Colatitude	H E———38½	
Latitude	E Z———51½	

After all, it must be observed here, that all these problems of finding the latitude of the place by the sun or star's meridian altitude, &c. belong chiefly to those places which lie within the temperate zones. If the place lie in the torrid or frigid zones, these methods of solution are good, when the meridian sun is on the same side of the zenith with the equator, whether north or south. But if not, then there must be some little difference of operation at some times of the year. Yet, if you project a scheme for the solution of such an enquiry like *Figure* 3, the very reason of things will shew you when you must add or subtract.

Problem VIII. To find the meridian altitude of the sun, any day of the year, the latitude of the place being given.

This is but the converse of the former problem, and therefore is to be performed the contrary way, *viz.* in winter subtract the declination V E, from the equinoctial altitude or colatitude H E, and the remainder is H V, the meridian altitude.

In summer, add the declination E S to the equinoctial altitude, or colatitude H E, and it gives the meridian altitude H S.

The meridian altitude at the equinoxes is the same with the colatitude, as before.

Problem IX. To find the declination of the sun, its meridian altitude and the latitude of the place being being.

It is hardly necessary to describe this practice to those who have perfectly learned the two foregoing problems.

Subtract the colatitude H E, from the meridian altitude in summer H S, and the remainder is the sun's summer declination E S.

Subtract the meridian altitude in winter H V, from the colatitude H E, and the remainder is the sun's winter declination E V.

Or, in short, if the meridian altitude and colatitude be given, subtract the less from the greater, and the remainder is the sun's declination.

Problem X. To find the latitude of a place by the meridian altitude of a star, when it is on the south meridian.

Find the declination of that star in some table or scale of the star's declination. If

it has declination northward, as the sun has in summer, subtract the declination from the meridian altitude, and it gives you the colatitude.

If the star's declination be southward, as the sun's is in winter, add its declination to its meridian altitude, and it gives you the colatitude.

Note, When I speak of north and southward in relation to winter and summer, in many of these problems, I mean in northern latitudes, such as ours is in Great Britain.

When the star is on the north meridian see how to find the latitude by it in Problem XXXII.

Problem XI. By what methods is the longitude of places to be found.

Though the latitude, which lies northward and southward, may be determined with the utmost certainty by the methods before proposed, yet the longitude of a place, which is the distance of any two places from each other eastward or westward, is very hard to be determined by the sun or stars, because they always appear moving round from east to west. The longitude therefore of places is usually found by measuring the distance on earth or sea, from west or east.

The map-makers, who describe countries, provinces, or kingdoms, measure the distances on the earth by an instrument made on purpose, with a wheel so contrived, that a certain number of its revolutions is equal to a pole, a furlong, or a mile; it hath also a mariner's compass and needle touched with a loadstone fastened to it, to shew how much their course varies from the north or south.

In this last age they have also invented a way to find the difference of longitude between two towns that are some thousands of miles asunder in distant nations: And that is by a nice and exact observation of the moment when the eclipses of the moon begin or end, made by mathematicians at those distant places: And thus by the difference of time in those eclipses they compute the distance of place.

This invention is still further improved by observations of the eclipses of the four moons or little secondary planets, which roll round the planet *Jupiter* as our moon does round our earth: By these means the supposed distances of some places in the East and West Indies have been altered, and the mistakes of several hundred miles corrected.

The sailors measure it at sea by the log, which is a piece of board fastened to a long line, which they cast out of the ship while a minute or half-minute glass begins to run: Then drawing in the log, they see how far the ship has sailed in a minute; and supposing the circumstances of the wind and water to be the same, they compute thereby how far they have sailed in some hours. But this being a very uncertain way of reckoning, because of the continual changes either of the strength or the point of the wind, or current of the water, they are often liable to mistakes. Therefore it has been the famous and solicitous inquiry of these last ages how to find out and ascertain longitude at sea; and there is so vast a reward as twenty thousand pounds offered by the parliament of Great Britain to any man who shall invent a method for it, which shall be plain, easy, and practicable at sea.

Problem XII. To find the value of the degree of a greater circle upon the earth, or how much it contains in English measure.

Here let it be noted, that one degree of a greater circle on the earth answers to one degree of a greater circle in the heavens. It is true the heavenly circles are incomparably larger than the circumference of the earth; and they are also larger than each other, according to the different distances of the planets and stars; yet every circle,

whether greater or lesser, is divided into 360 degrees, and therefore though circles differ never so much in magnitude, yet, when they are supposed to be concentrical, *i. e.* to have the same centre, every single degree of each circle is correspondent to a single degree of all the other circles.

Now that a degree of the heavens thus answers to a degree on the earth is very evident; for if we travel on earth, or sail one degree northward or southward on the same meridian, we shall find by the sun or the fixed stars in heaven, that our zenith is just a degree altered, our latitude is changed one degree, and our pole is one degree more or less elevated, *viz.* more elevated if we go from London toward the north, and less elevated if we go toward the south, till we come to the equator: Afterward the contrary pole is elevated gradually. By such experiments as these philosophers infer also that the earth is a globe, and not a plane surface.

Wherefore, to find the value of a degree on a greater circle of the earth, you must travel directly in the same meridian, measuring your miles all the way, till your latitude be altered one degree; and then, if you have been exact in your measure, you will find that you have travelled about seventy English miles; though geographers often reckon sixty geographical miles to a degree for greater ease in computation, as I have said before.

Problem XIII. To find the circumference, the diameter, the surface, and solid contents of the earth.

Having found the value of one degree to be seventy miles, multiply that by 360, and it produces 25,200 miles for the circumference.

The diameter is in proportion to the circumference as 113 to 355, or as 50 to 157, or in more brief and vulgar account as seven is to twenty-two, which will make the diameter of the earth to be about 8000 miles.

Multiply the circumference by the diameter, and that product shall be the square feet, furlongs, miles, &c. of the surface.

Multiply the surface by the sixth part of the diameter, and that will give the solid content.

Note, That geographers differ a little in the computation of these measures, because they differ in the measure of a single degree: And that is because of the crookedness and inequality of any road that you can travel for seventy miles together: The justest measurers have made $69\frac{1}{2}$ miles go to a degree, or the round number of seventy miles.

Problem XIV. To find the value of a degree of a lesser circle on the earth, *i. e.* the value of a degree of longitude on the lesser parallels of latitude.

I have mentioned it before, under the 3d Problem of the 19th Section, that all the degrees marked on the equator, or on any of the meridians, are seventy miles, because all those lines are great circles; yet in the parallels of latitude, the further you go from the equator, the circle grows less and less, and consequently each degree of it must be less also; and for this reason the whole circle of 360 degrees near the pole will not make above 360 miles; and as you approach still nearer to the pole, it will not make so many furlongs or feet.

To find therefore the true value of a degree, suppose in the parallel of latitude of London $51\frac{1}{2}$ degrees, use this method, *Figure* 22. Make a straight line A B to represent one degree in the equator, divide it into sixty geographical miles, or into seventy English

miles, all equal: Set the foot of your compasses in A, describe an arch from B to C of $51\frac{1}{2}$ degrees, then from the point C let fall a perpendicular to D, and A D is the measure of a degree of longitude in the parallel of London, *viz.* about $43\frac{1}{2}$ miles.

The demonstration of it may thus be explained. Prolong the arch B C and complete the quadrant E A B. Then E shall represent the north pole, E A the northern half of the axis of the world, A B the semidiameter at the equator, and N C the semidiameter of the parallel of latitude for London. Then, arithmetically, if the line A B, suppose 1000 equal parts, allow seventy miles for a degree, what will N C, *i. e.* about 621 equal parts, allow? *Answer* $43\frac{1}{2}$.

Or trigonometrically thus. A B is the whole sine of ninety degrees, or radius. N C is the sine of the colatitude $38\frac{1}{2}$ degrees. Then say, as A B, or the sine ninety degrees, is to seventy miles, so is N C or A D, the sine of $38\frac{1}{2}$ degrees, to $43\frac{1}{2}$ miles.

Note, This diagram, or figure, will shew the value of a degree of longitude in any parallel of latitude, if from every degree in the arch E C B a perpendicular were drawn to the line A B.

Therefore a whole line of sines, if numbered backward, and applied to a scale of seventy equal parts, will shew the miles contained in one degree of longitude under any parallel of latitude whatsoever.

Having shewn, in former problems, how to take the meridian altitude of the sun, and thereby to find the latitude of any place on the earth, I think it may be proper now to shew how to project the sphere for any latitude upon the plane of the meridian, and represent it in straight lines, which is called the analemma; because the erection of this scheme, and sometimes of a little part of it, will solve a variety of astronomical problems, as will appear hereafter.

Problem XV. To erect the analemma, or represent the sphere in straight lines, for the latitude of London, $51\frac{1}{2}$ degrees.

First, It is supposed you have a scale of chords at hand, or a quadrant ready divided into ninety degrees. Take the extent of sixty degrees of the line of chords in your compasses, or, which is all one, the radius of your quadrant, and describe the circle N Z E H S Q for a meridian, both north and south, as in *Figure* 23, *viz.* N E S, which represents twelve o'clock at noon; and N Q S, which represents the hour of midnight.

Through C the centre draw the line H O for the horizon. At ninety degrees distance from H and O mark the point Z and D for the zenith and nadir; then draw the line Z D, which will cross H O at right angles, and will represent the azimuth of east and west; as the semicircle Z O D represents the north azimuth, and Z H D the south.

Above the horizon O mark N for the north pole elevated $51\frac{1}{2}$ degrees: Through the centre C draw the line N S for the axis of the world; which line will also represent the hour circle of six o'clock, being at ninety degrees distance from noon and midnight; S will stand for the south pole, depressed as much below H the south side of the horizon, as N the north pole is raised above O on the north side of it.

At ninety degrees from N mark E and Q on each side; then cross the axis of the world N S with the line E Q at right angles, which represents the equator. Thus E will be ninety degrees from N the north pole, $51\frac{1}{2}$ degrees from Z the zenith, which is the latitude, and it will be $38\frac{1}{2}$, degrees above H the horizon, which is the complement of the latitude.

At $23\frac{1}{2}$ degrees from E on each side mark the points M and W; then parallel to the

equator or E Q; draw the line M ♋ for the tropic of cancer, and the W ♑ for the tropic of capricorn. After that, through the centre C draw M ♑ which is the ecliptic: It cuts the equator E Q in C, and makes an angle with it of $23\frac{1}{2}$ degrees.

From the points N S mark *p* and *x* on each side, at the distance of $23\frac{1}{2}$ degrees, *p p* are the poles of the ecliptic, and the lines *p x* and *x p* being drawn are the two polar circles, *viz.* the arctic and antarctic.

Thus the analemma is completed for all general purposes or problems.

The further observables in it are these, *viz.*

M is the sun's place in the ecliptic when it enters *cancer* at the summer solstice: and the arch E M is its north declination $23\frac{1}{2}$ degrees.

C is the sun's place in the ecliptic, entering *aries* or *libra* at the equinoxes; and then it has no declination.

♑ is the sun's place in the ecliptic, entering *capricorn* at the winter solstice; and the arch ♑ Q, or, which is all one, E W, is its south declination $23\frac{1}{2}$ degrees.

The line M ♋ is the sun's path the longest day, or at the summer solstice; it is at ♋ at midnight; it rises at R; it is at six o'clock at 6; it is in the east azimuth at V; it is on the meridian at M that day, and the arch M H is its meridian altitude, *viz.* 62 degrees.

The line E Q is the sun's path on the two equinoctial days at *aries* and *libra;* it is at midnight at Q; it rises at C, and it is in the same moment at the east and six o'clock; for on the equinoctial days Z D the azimuth of east and west, and N S the six o'clock hour line, both meet at C in the horizon H O, which never happens any other day in the year; then the sun goes up to E at noon; and E H is the arch of its meridian altitude at the equinoxes, *viz.* $38\frac{1}{2}$ degrees.

W ♑ is the sun's path the shortest day, or at the winter solstice; it is at midnight at ♑; it is in the east at K long before it rises; it is six o'clock at G before it rises also; then at I it rises or gets above the horizon; it is noon at W, and its meridian altitude is W H or 15 degrees.

The sun's ascensional difference, that is, its distance from six o'clock at its rising or setting, in the summer solstice, is the line R 6, and at the winter solstice it is the line I G.

Its amplitude, or distance from east or west at its rising or setting, in summer is R C; in winter it is I C.

Here you must suppose that the sun goes down again from the meridian in the afternoon on the other side of the scheme or globe, in the same manner in which its ascent toward the meridian is represented on this side: So that the line M R represents the sun's semidiurnal arch at midsummer, E C at the equinoxes, and W I at midwinter. The semidiurnal arch is half the arch it makes above the horizon.

Note, That as we have described the various places of the sun's appearance above the horizon H O at the several seasons of the year, so the various places of its depression below the horizon H O may be easily found out and described by any learner.

Problem XVI. How to represent any parallel of declination on the analemma, or to describe the path of the sun any day in the year.

Find out what is the sun's declination that day by some scale or table: Observe whether it be the winter or the summer half-year; and consequently whether the declination be north or south: Then for the north side of the equator, if it be summer, set

the degrees of north declination upward from E toward Z; if it be winter set the south declination downward from E toward H: And from the point of declination, suppose it be M or W, draw a line parallel to E Q the equator, as M ♋ or W ♑, and it represents the parallel of declination, or the path of the sun for that day.

Problem XVII. How to represent any parallel of altitude, either of the sun or star on the analemma.

As the lines of declination are parallel to the equator; so the lines of altitude are parallel to the horizon: Suppose therefore the altitude of the sun be about 42 degrees; set up 42 degrees on the meridian from H to A, draw the line A L parallel to H O, and it describes the sun's parallel of altitude that moment.

Here note, That where the sun's parallel of declination for any day and his parallel of altitude for any moment cross each other, that is an exact representation of the sun's place in the heavens at that time: Thus the point *sol* ⊙ is the precise place where the sun is when he is 42 degrees high on the longest day of the year: For M ♋ represents his path or parallel of declination that day, and A L represents his parallel of altitude that moment.

I might add here also, that the pricked arch N ⊙ S represents the hour circle in which the sun is at that moment; and Z ⊙ D represents its azimuth or vertical circle at that time. *Note*, These arches are troublesome to draw aright, and are not at all necessary to solve common problems by the scale and compasses on the analemma.

Problem XVIII. The day of the month and the sun's altitude being given, how to find the hour or azimuth of the sun by the analemma.

The two foregoing problems acquaint you how to fix the precise point of the sun's place any minute of any day in the year by the parallel of declination and parallel of altitude crossing each other.

Now suppose the day of the month be the 6th of May, and the sun's altitude 34 degrees in the morning. Describe the semicircle H Z O in *Figure* 24, for the meridian. Make H C O the horizon. Draw E C, making with H C an angle of the colatitude $38\frac{1}{2}$ degrees, to represent the equator. Seek the declination of the sun, and in the tables or scales you will find it near $16\frac{1}{2}$ degrees northward; set $16\frac{1}{2}$ from E to D; draw D R for the path of the sun that day, parallel to E C the equator. Then set the altitude 34 degrees from H to A, draw A L parallel to H O the horizon, thus the point ⊙ shews the place of the sun, as before.

Now if you would find the hour, you must draw the line C N at right angles with the equator E C, which represents the six o'clock hour line; and the distance 6 ⊙ is the sun's hour from six; that is, his hour after six in the morning, or before six in the afternoon.

If you are to seek the azimuth, then you must draw the line C Z perpendicular to H O, which is the vertical circle of east or west; then the extent F O is the sun's azimuth from east in the morning, or from west in the afternoon.

Thus you see that in order to solve those two difficult problems of the hour or azimuth, you need but a very few lines to perform the whole operation; for if you want only the hour, C Z may be omitted; if you want only the azimuth, C N may be omitted.

Yet in the winter half-year, suppose the 13th of November, when the declination is near 18 degrees south, it must be set downward as E W from E toward H; then you

Fig. 23.

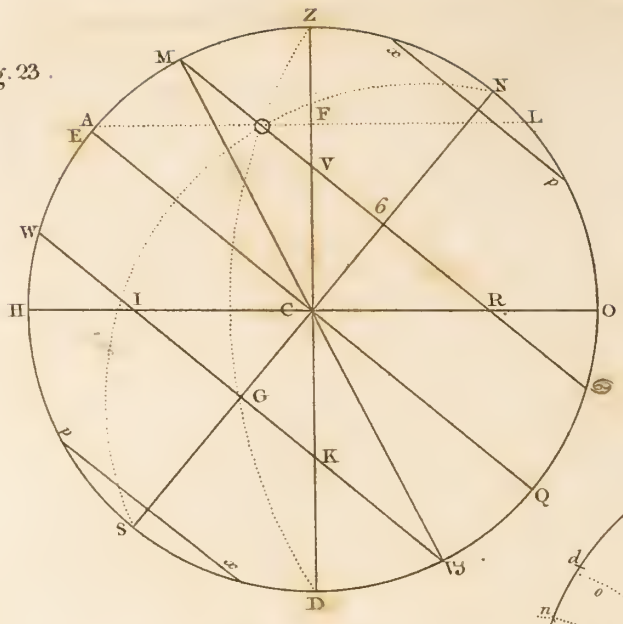


Fig. 24.

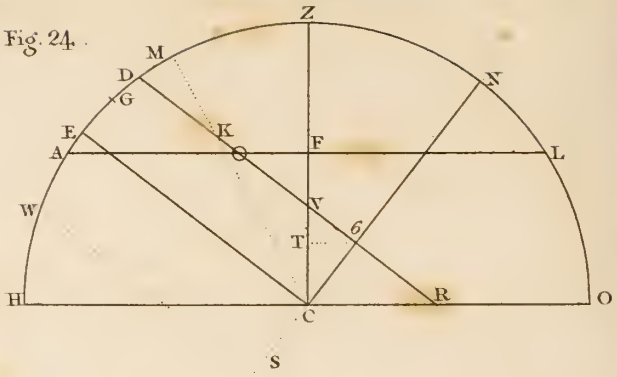


Fig. 25.

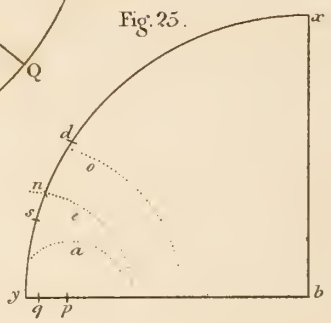


Fig. 31.

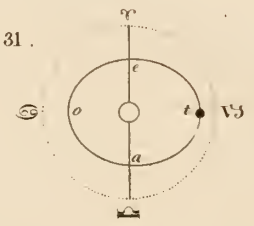


Fig. 28.

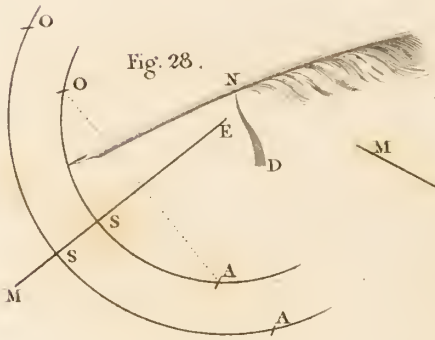


Fig. 27.

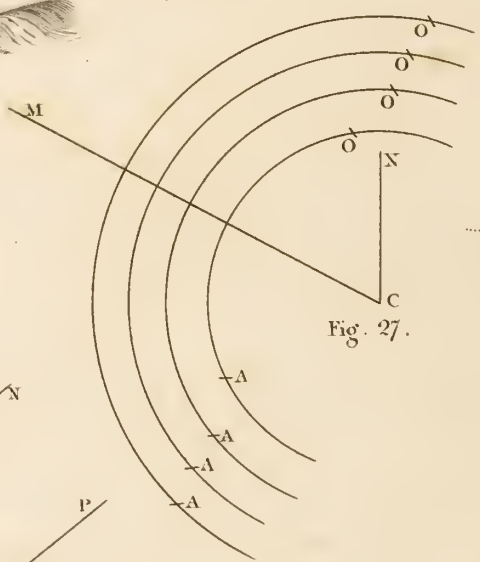


Fig. 26.

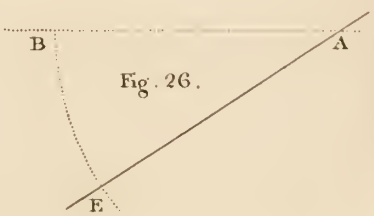


Fig. 29.

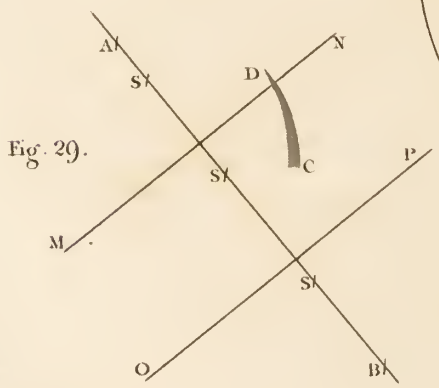
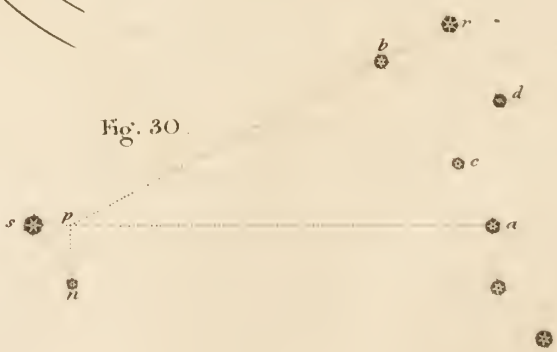


Fig. 30.



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cannot so well find the hour without producing the six o'clock line N C below the horizon down to S, that you may measure the hour from S or six.

Observe also, that this little diagram in *Figure* 24, will solve a great variety of problems, besides the hour and azimuth on the 6th of May: It shews the length of the day by the semidiurnal arch D R. The sun's ascensional difference is 6 R. His amplitude is C R. His azimuth from east or west at six is T 6. His altitude at east and west is V C. His meridian altitude is the arch D H: And his azimuth from east or west at rising or setting is the line C R.

Problem XIX. How to measure the number of degrees on any of the straight lines in the analemma.

I think there is no need to inform the reader, that any part of the outward circle, or meridian, may be measured upon that scale of chords, or quadrant, according to whose radius the whole analemma is drawn.

As for the straight lines, they are all to be considered as sines; those semidiameters which are drawn from the centre C to the circumference are so many whole lines of sines, or ninety degrees, to the common radius of the semicircle. But if you consider any whole diameter which passeth through the centre C, it is a line of versed sines, that is, two lines of right sines joined at their beginning to the same common radius of the semicircle.

If therefore you have a scale or line of sines at hand to the same radius of the circle, you may measure any part of those straight lines, setting one foot of the compasses in the centre C, and extending the other to the point proposed, then applying that extent to the beginning of the line of sines, and observing how far it reaches.

But if you have no scale or line of sines at hand, you may find the quantity of any part of the semidiameter by the outward limb or semicircle, and by the scale of chords, according to whose radius the semicircle is drawn. The method of performing it see in *Figure* 25, where the quadrant *y x b* is drawn by the same radius as the semicircle in *Figure* 24. But I chose to make it a distinct figure, lest the lines should interfere with one another and breed confusion; and therefore in *Figure* 24, I have used capital letters; in *Figure* 25, all the letters are small.

Suppose I would find how many degrees are contained in V C, which is the sun's altitude at east or west. This is a part of the semidiameter C Z: Suppose therefore C Z to be a whole line of sines, beginning to be numbered at C. Take the extent V C in your compasses, and carry one leg up in the arch *y x* till the other leg will but just touch the diameter *y b*, and the leg of the compasses will rest at *n*; wherefore it appears that C V in *Figure* 24 is the sine of the arch *y n* in *Figure* 25, or 21 degrees.

Another way to perform it is this: Take the extent V C, set one leg of the compasses in *y*, and with that extent make a blind or obscure arch at *e*, and by the edge of that arch lay a rule from the centre *b*, and it will find the point *n* in the limb, *viz.* 21 degrees.

By the same practice you may find the number of degrees contained in any part of those lines which are drawn from the centre C, *viz.* C H, C E, C M, C Z, C N, C O, all which are whole lines of sines to the common radius of the quadrant.

But as for those lines in the analemma which are not drawn from the centre C, but are drawn across some other diameter and produced to the limb, such as the line 6 D,

the line S W, the line F A, and the line F L, each of these are to be esteemed as a whole line of sines also, but to a less radius.

So 6 ☉, *Figure* 24, is the sine of the sun's hour from 6; but the radius is 6 D, and the number of degrees in 6 ☉ is to be found in this manner: Take the extent 6 D, or this whole lesser radius, in your compasses, and set it from *b* to *q*, in *Figure* 25; then take the extent 6 ☉, and setting one foot of the compasses in *q*, make an obscure arch at *o*, and a ruler laid from *b* the centre by the edge of that arch *o* will find the point *d* in the limb, and shew that *d y* is $34\frac{1}{4}$ degrees, which, turned into hours, is two hours 17 minutes, from six, *viz.* 17 minutes past eight in the morning, to 43 minutes past three in the afternoon.

Again, F ☉, in *Figure* 24, is the sine of the azimuth from east to west to the radius F A; take therefore F A in your compasses and set it from *b* to *p*, in *Figure* 25; then take the extent F ☉, and with one foot in *p* make the obscure arch *a*; by the edge of that arch lay a ruler from *b* the centre, and you will find the point *s* in the limb; therefore *y s* is the azimuth from east to west, that is, about 17 degrees.

Note, If you have the instrument called a sector at hand, and know how to use it, you may with great ease and exactness find the value of any sine in the analemma, whether it be to a greater or a lesser radius, without these geometrical operations.

Problem XX. To find the sun's place in the ecliptic any day in the year.

It is well known that the 12 signs of the zodiac, each of which has 30 degrees, contain in all 360 degrees: And the sun is said to go through them all once in twelve months, or a year. Therefore in a vulgar account, and for the use of learners, we generally say, the sun goes through one degree in a little more than a day, and thereby finishes the 360 degrees in 365 days. But this is not the justest and most accurate account of things: Let us therefore now, toward the end of this book, with a little more exactness observe,

1. That the annual course which the sun appears to take through the ecliptic round the earth, is much more properly and truly ascribed to the earth's moving or taking its course round the sun; though the common appearances to our eye are much the same as if the sun moved.

2. This annual course or path of the earth is not properly a circle, but an ellipsis or oval: And as the sun is fixed in one of the focus's of the ellipsis, so the fixed stars, and among them the 12 signs, surround and encompass it. See *Figure* 31, where the black point *t* is the earth in its orbit moving round, and ☉ the sun near the middle, and the outward circle of points is the starry heaven.

3. That part of this ellipsis or oval, which the earth traces in our winter half-year, *i. e.* from autumn to spring, is nearer to the sun than the other part of it which the earth traces in our summer half-year, *i. e.* from spring to autumn. And as it is nearer to the sun, so consequently it is the shorter or lesser half, if I may so express it. The very figure shews it plainly.

Note, By our winter and our summer I mean those seasons as they respect us in Europe, and in these northern parts of the globe.

4. Thence it follows that the sun appears to finish its winter half-year from September 23d to March 20th, *i. e.* from ♎ by ♑ to ♈ sooner by seven or eight days than it does the summer half-year, *i. e.* from ♈ by ♋ to ♎, or from March 20th to September 23d, which is proved thus: When the earth is at *t*, the sun appears at ♋ and it is midsummer.

When the earth is at *e* the sun appears at ♎ and it is autumn. When the earth is at *o* the sun appears at ♑ and it is midwinter. And when the earth is at *a* the sun appears at ♈ and it is spring. Thus the sun appears to pass through those signs which are just opposite to those which the earth passes. Now as the earth is longer in going through the arch *a t e*, from ♎ to ♈, than it is going through the arch *e o a*, from ♈ to ♎, so consequently the sun appears to pass through the opposite signs from *aries* to *libra*, slower than he does from *libra* to *aries*.

This is proved also plainly by the computation of days.

After the sun enters *aries* on March 20th, that month hath 11 days, and after the sun enters *libra* on September 23d, that month hath eight days. Now let us compute.

March	11	♈		September	8	♎
April	30			October	31	
May	31			November	30	
June	30	Days		December	31	Days
July	31			January	31	
August	31			February	28	
September	22	♎		March	20	♈
Summer	186	Days		Winter	179	Days

5. Agreeably hereto it is found that in the winter months, chiefly from the latter end of October to the middle of March, the sun appears to move something more than one degree in a day: But in the summer months, chiefly from the middle of March to the latter end of October, the sun appears to move something less than one degree in a day. This is one reason why a good pendulum clock measures time more justly than the sun: And it is this irregularity of the sun's measuring time that makes the tables of equation of time necessary.

6. And thence arises a sensible inequality between the times of the sun's apparent continuance in different signs of the zodiac: He seems to tarry longer in those of the summer, and shorter in those of the winter: So that he does not leave one sign, and enter another just in the same proportions or distances of time every month.

7. This occasions a little variation of the declination of the sun, and his right ascension from the regularity that we might expect; for they are both derived from his apparent place in the ecliptic: And therefore none of them can be found by learners with utmost exactness, but in an ephemeris or tables which shew the sun's place, &c. every day in the year.

8. Let it be noted also, that the leap-year, with its additional day the 29th of February, returning every four years, forbids the sun's place in the ecliptic to be exactly the same at the same day and hour of the following year, as it was in the foregoing, so that though you knew the sun's place, his right ascension and declination for one whole year, that would not serve exactly for the next year, for the nicest purposes of astronomy.

9. Yet as in four years time the sun appears very nearly at the same place in the heavens again at the same day and hour and minute as before, so a table that contains the round of four years is a sufficient direction for twenty years to find the sun's place for any common purposes: Provided always that we seek the sun's place, declination, or right ascension, for any year, and day in that year, in the table that is equally distant from leap-year, whether it happens to be the first, the second, or the third after leap-year,

or whether it be the leap-year itself. See more of this matter, Sect. XXI. of the Tables of Declination.

10. If we would make one single table or scale of the sun's entrance into the signs of the zodiac, or of his declination or right ascension, to serve for every year, we must choose the second after the leap-year, because that comes nearest to the mean or middle course and place of the sun, and will occasion the least error in any operations.

I have therefore here set down a short table of the sun's entrance into the several signs, for the year 1754, which is the second after leap-year; and for geometrical operations with a plain scale and compass, it is sufficiently exact for twenty years to come.

Anno 1754, the second after leap-year.

	Day			d. m.		Day			d. m.
March	20	—	♈	0 : 09	September	23	—	♎	0 : 21
April	20	—	♉	0 : 19	October	23	—	♏	0 : 03
May	21	—	♊	0 : 16	November	22	—	♐	0 : 14
June	22	—	♋	0 : 51	December	22	—	♑	0 : 44
July	23	—	♌	0 : 25	January	21	—	♒	0 : 33
August	23	—	♍	0 : 11	February	20	—	♓	0 : 55

It is not possible to form all this irregular variety of times when the sun enters the several signs into any memorial lines or rhymes with any exactness and perspicuity; and therefore I have omitted the attempt. Such a short table as this may be always carried about by any person who deals frequently in such operations and inquiries.

But to give an example of the practice. Suppose it be inquired, what is the sun's place, April 25th, I find the sun just entered into *taurus* ♉ April the 20th, then I reckon it is in the 5th degree of ♉ April the 25th, which added to the whole 30 degrees of *aries*, shews the sun to be 35 degrees from the equinoctial point ♈ on the 25th of April.

If the 29th of November we inquire the sun's place, we must consider the sun is just entered ♐ the 22d of November: Therefore on the 29th it is about 7 degrees in ♐, which added to 30 degrees of ♏ and 30 degrees of ♎, shews the sun on the 29th of November to be about 67 degrees from the autumnal equinox or ♎.

Thus by adding or subtracting, as the case requires, you may find the sun's place any day in the year: And thence you may compute its distance from the nearest equinoctial point, which is of chief use in operations by the analemma.

Problem XXI. The day of the month being given, to draw the parallel of declination for that day without any tables or scales of the sun's declination.

This may be done two ways. The first way is by considering the sun's place in the ecliptic, as May the 6th, it is 46 degrees from the equinox northward. Therefore, in *Figure* 24, after you have drawn H Z O the meridian, E C the equator, set up $23\frac{1}{2}$ degrees, the sun's greatest declination from E to M; draw M C to represent the ecliptic; then take 46 degrees from a line or scale of sines and set it from C the equinoctial point to K in the ecliptic; through the point K, draw D R parallel to E C the equator. Thus D R represents the sun's path that day, and shews the declination to be E D or $16\frac{1}{2}$.

Note, If you have never a scale of sines at hand, then take the chord or the arch of 46 degrees, set it up in the limb from H to G, set one foot of the compasses in G, and take the nearest distance to the line H O or diameter, and that extent is the sine of 46 degrees.

The other way of drawing a parallel of declination, is by seeking what is the meridian altitude for the 6th of May, and you will find it to be 55 degrees. Set up therefore the

arch of 55 degrees from H to D; and from the point D draw D R a parallel to E C, which shews the declination and sun's path as before.

Thus, though you have no scales or tables of the sun's declination at hand, you see it is possible to find the hour and azimuth, and many other astronomical problems, by the analemma for any day in the year. But this method which I proposed of performing them, by finding the sun's place in the ecliptic by any short general scale or table, is liable to the mistake of near half a degree sometimes.

Observe here, if you have by any means obtained and drawn the sun's path, *viz.* D R for any given day, you may find both the sun's place in the ecliptic and its right ascension by drawing C M the ecliptic. For then C K will be the sine of the sun's place or longitude to the common radius C M: And 6 K will be the sine of the sun's distance on the equator from the nearest equinoctial point, but the radius is 6 D: From hence you may easily compute its right ascension.

Note, Though the little schemes and diagrams which belong to this book, are sufficient for a demonstration of the truth and reason of these operations, yet if you have occasion to perform them in order to find the hour or azimuth with great exactness, you must have a large flat board, or very stiff pasteboard with white paper pasted on it, that you may draw a semicircle upon it of nine or ten, or rather twelve inches radius; and the lines must not be drawn with ink, nor with a pencil; for they cannot be drawn fine enough: But draw them only with the point of the compass; and you must observe every part of the operation with the greatest accuracy, and take the sun's place or declination out of good tables: For a little error in some places will make a foul and large mistake in the final answer to the problem.

Yet if the sun be within seven or eight days of either side of either solstice, you may make the tropic of cancer or capricorn serve for the path of the sun, without any sensible error; for in 16 days together at the soltices, its declination does not alter above 12 or 15 minutes: But near the equinox you must be very exact; for the declination alters greatly every day at that time of the year.

There might be also various geographical practices or problems, that relate to the earthly globe performed by the assistance of the analemma, and several other astronomical problems relating to the sun and to the fixed stars; but some of them are more troublesome to perform; and what I have already written on this subject is abundantly sufficient to give the learner an acquaintance with the nature and reason of these lines, and the operations that are performed by them. And for my own part, I must confess, there is nothing has contributed to establish all the ideas of the doctrine of the sphere in my mind, more than a perfect acquaintance with the analemma.

Problem XXII. How to draw a meridian line, or a line directly pointing to north and south on a horizontal plane, by the altitude or azimuth of the sun being given.

At the same time while one person takes the altitude of the sun in order to find the azimuth from noon by it, let another hold up a thread and plummet in the sun-beams, and mark any two distant points in the shadow, as A B, *Figure* 26, and then draw the line A B: Suppose the azimuth at that moment be found to be 35 degrees, draw the line A E at the angle of 35 degrees from A B, and that will be a true meridian line.

You must observe to set off the angle on the proper side of the line of shadow eastward or westward, according as you make your observation in the morning or in the afternoon.

Note, Where you use a thread and plummet, remember that the larger and heavier your plummet is, the steadier will your shadow be, and you will draw it with greater ease and exactness.

In this and the following operations to draw a meridian line, you must be sure that your plane be truly level and horizontal, or else your performances will not be true.

Problem XXIII. To draw a meridian line on a horizontal plane by a perpendicular style.

Note, That when I speak of a perpendicular style, I mean either of those three sorts of styles before-mentioned in Problem I. *viz.* A straight needle stuck into the board perpendiculary, as *Figure* 15; a straight or crooked wire stuck in sloping at random with the perpendicular point found under the tip of it, as *Figure* 16; or the brass prism, as *Figure* 17. For what I call a perpendicular style may be applied and ascribed to either of these.

Make several parallel circles or arches, as *Figure* 27: In the centre of them fix your perpendicular style N C. Mark in the morning what point in any circle the end of the shadow touches, as A. In the afternoon mark where the end of the shadow touches the same circle, as O: Divide the arch A O just in halves by a line drawn from the centre, and that line C M will be a true meridian line.

The reason of this practice is derived hence, *viz.* that the sun's altitude in the afternoon is equal to the sun's altitude in the morning, when it casts a shadow of the same length: And at those two moments it is equally distant from the point of noon or the south, which is its highest altitude: Therefore a line drawn exactly in the middle between these two points of shadow, must be a meridian line or point to the north and south.

This problem may be performed by fixing your perpendicular style first, and observing the shadow A before you make the circles, especially if you use the brass prism, or the sloping style with the perpendicular point under it, then set one foot of your compasses in the perpendicular point C, extend the other to A, and so make the circle.

If you use the prism for a style, you may mark a line or angle at the foot of it where you first fix it, and place it right again, though you move it never so often.

It is very convenient to mark three or four points of shadow in the morning, and accordingly draw three or four arches or circles, lest the sun should not happen to shine, or you should not happen to attend just at that moment in the afternoon when the shadow touches that circle on which you marked your first point of shadow in the morning.

If you would be very exact in this operation, you should tarry till the sun be gone one minute further westward in the afternoon, *i. e.* till one minute after the shadow touches the same circle, and then mark the shadow; because the sun in six hours time, which is one quarter of a day, is gone eastward on the ecliptic in his annual course one minute of time, which is 15 minutes, or one quarter of a degree.

Problem XXIV. To draw a meridian line on a horizontal plane by a style or needle set up at random.

Another method, near akin to the former, is this: Set up a needle or sharp-pointed style at random, as N D, in *Figure* 28. Fix it very fast in the board, and observe a point of shadow in the morning, as A. Then with a pen stuck on the tip of the style N, without moving the style, draw the arch A S O: Mark the point of shadow O, in the afternoon when it touches that arch, or rather when it is one minute past it. Then draw

the line A O and bisect it, or cut it in halves, by a perpendicular line M E, which is a true meridian.

Note, In this method you have no trouble of fixing a style perpendicular, nor finding the point directly under it for a centre. But in this method, as well as in the former, it is good to mark three or four points of shadow in the morning, and draw arches or circles at them all, for the same reason as before.

Observe here, That in these methods of drawing a meridian line by the shadow of a tip of a style, I think it is best generally to make your observations between eight and ten o'clock in the morning, and between two and four in the afternoon. Indeed, in the three summer months, May, June, and July, you may perhaps make pretty good observations an hour earlier in the morning, and later in the afternoon; but at no time of the year should you do it within an hour of noon, nor when the sun is near the horizon; for near noon the altitude of the sun, or the length of shadow, varies exceeding little; and when the sun is near the horizon, the point and bounds of the shadow are not full and strong and distinct, nor can it be marked exactly.

Therefore, if in the three winter months, November, December, or January, you make your observation, you should then do it half an hour before or after ten o'clock in the morning, and so much before or after two in the afternoon; for otherwise the sun will be either too near noon, or too near the horizon.

But, in general, it may be advised that the summer half-year is far the best for observation of shadows in order to any operations of this kind.

Problem XXV. To draw a meridian line on an equinoctial day.

On an equinoctial day, or very near it, as the 8th, 9th, or 10th of March, or the 11th, 12th, or 13th of September, you may make a pretty true meridian line very easily thus, by *Figure* 29.

Mark any two points of shadow, as A B from a needle C D set up at random, no matter whether it be either upright or straight. Let those two shadows be at least at the distance of three or four hours from each other, and it is best they should be observed one in the morning, and the other about the same distance from 12 in the afternoon; and then draw the line A B which represents the equinoctial line, and is the path of the sun that day: Cross it any where at right angles, and M N, or O P, are meridian lines.

Note, It is best to mark several shadows that day, as S S S, and draw a right line A S S B by those which lie nearest in a right line, that you may be the more exact.

Problem XXVI. To draw a meridian line by a point of a shadow at noon.

If you have an exact dial to whose truth you can trust, or a good watch or clock set exactly true by the sun that morning, then watch the moment of twelve o'clock or noon, and hold up a thread and plummet against the sun, and mark the line of shadow on a horizontal plane, and that will be a true meridian line.

Or you may mark the point or edge of shadow, by any thing that stands truly perpendicular, at the moment of twelve o'clock, and draw a meridian line by it.

Problem XXVII. To draw a meridian line by a horizontal dial.

If you have a horizontal dial which is not fastened, and if it be made very true, then find the exact hour and minute by a quadrant, or any other dial, *&c.* at any time of the day, morning or afternoon; set the horizontal dial in the place you design, to the true hour and minute; and the hour line of twelve will direct you to draw a meridian.

Or if your dial be square, or have any side exactly parallel to the hour line of twelve, you may draw your meridian line by that side or edge of the dial.

Problem XXVIII. How to transfer a meridian line from one place to another.

There are several ways of doing this:

First Way. If it be on the same plane, make a parallel line to it, and that is a true meridian.

Second Way. If it be required on a different plane, set some good horizontal dial to the true hour and minute by your meridian line on the first plane, then remove it and set it to the same minute on the second plane, and by the twelve o'clock line mark your new meridian.

Note, If the sides or edges of your horizontal dial are cut truly parallel to the twelve o'clock line, you may draw a meridian by them as before.

Third Way. Hold up a thread and plummet in the sun, or set up a perpendicular style near your meridian line any time of the day, and mark what angle the line of shadow makes with that meridian line on your first plane; then at the same moment, as near as possible, project a line of shadow by the thread, or another perpendicular style on the new plane, and set off the same angle from it, which will be a true meridian.

Note, Two persons may perform this better than one.

Problem XXIX. How to draw a line of east and west on a horizontal plane.

Where a meridian line can be drawn, make a meridian line first, and then cross it at right angles, which will be a true line of east and west.

But there are some windows in a house, on which the sun cannot shine at noon; in such a case you may draw a line of east and west several ways.

First Way. You may use the same practice which Problem XXII. directs, with this difference, *viz.* instead of seeking the sun's azimuth from the south, seek its azimuth from east and west, and by a line of shadow from a thread and plummet marked at the same time, set off the angle of the sun's azimuth from the east in the morning, or the west in the afternoon. A common observation of the course of the sun will sufficiently inform you on which side of the line of shadow to set your angle.

Second Way. You may use the second method of transferring a meridian line by a horizontal dial with this difference, *viz.* instead of using the twelve o'clock hour line, by which a meridian was to be drawn, use the six o'clock line, which will be east and west; for in a horizontal dial it stands always at right angles with the meridian.

Third Way. The third method of transferring a meridian line will serve here also; but with this difference, *viz.* set off the complement of the angle which the line of shadow makes with your meridian line on the first plane, instead of setting off the same angle; and observe also to set it off on the contrary side, that so it might make a right angle with a meridian line if that could have come on the plane.

Problem XXX. How to use a meridian line.

The various uses of a meridian line are these:

First Use. A meridian line is necessary, in order to draw a horizontal dial on the same plane, or to fix a horizontal dial true if it be made before.

Second Use. A brass horizontal dial may be removed from one place to another in several rooms of the same house; and shew the hour wheresoever the sun comes, if either a meridian line or line of east and west be drawn in every window, by which to set a horizontal dial true.

Third Use. By a thread and plummet, or any perpendicular pin, or post casting a shadow precisely along the meridian line, we find the hour of twelve, or the point of noon, and may set a watch or clock exactly true any day in the year, if we have no dial at hand.

Fourth Use. It is necessary also to have some meridian line in order to find how a house or wall stands with regard to the four quarters of the heavens, east, west, north, or south, which is called the bearing of a house or wall, that we may determine what sort of upright dials may be fixed there, or what sort of fruit-trees may be planted, or which part of a house or garden is most exposed to the sun, or to the sharp winds.

Fifth Use. By observing the motion of the clouds, or the smoke, or a vane or weather-cock, you cannot determine which way the wind blows, but by comparing it with a meridian line, or with a line of east and west.

When once you have got a true meridian line, and know which is the south, then the opposite point must be north; and when your face is to the north, the east is at your right hand, and the west at your left.

Sixth Use. A meridian line will shew the azimuth of the sun at any time by holding up a thread and plummet in the sun, and observing where the line of shadow crosses it. Or the sharp smooth edge of an upright style or post will cast a shadow across a meridian line, and shew the sun's azimuth.

Seventh Use. If you have a meridian line on a horizontal plane, you may draw a circle on that as a diameter, and divide it into 360 degrees; then set up a fixed or moveable perpendicular style, and it will shew the azimuth of the sun at all hours.

Eight Use. A perpendicular style on a meridian line will shew the sun's meridian altitude by the tip of the shadow according to Problem II. And thereby you may find the latitude of any place by Problem VII.

Ninth Use. If you have a broad smooth board with a foot behind at the bottom, to make it stand, such as is described in Problem XXIII. of the nineteenth Section, and if it be made to stand perpendicular on a horizontal plane by a line and plummet in the middle of it, you may set the bottom or lower edge of this board in the meridian line, and by your eye fixed at the edge of the board and projected along the flat side, you may determine at night what stars are on the meridian; and then by the globe, as in Problems XXXIII. and XXXIV. Section XIX. or by an instrument called a nocturnal, you may find the hour of the night, or by an easy calculation, as in the 33d Problem of this 20th Section.

Problem XXXI. How to know the chief stars, and to find the north pole.

If you know any one star, you may find out all the rest by considering first some of the nearest stars that lie round it, whether they make a triangle or a quadrangle, straight lines or curves, right angles or oblique angles with the known star. This is easily done by comparing the stars on the globe, being rectified to the hour of the night, with the present face of the heavens, and the situations of the stars there, as in Problem XXXII. Section XIX.

And indeed it is by this method that we not only learn to know the stars, but even some points in the heavens where no star is. I would instance only in the north pole, which is easily found, if you first learn to know those seven stars which are called *Charles's wain*, see *Figure* 30, four of which in a quadrangle may represent a cart or waggon, *b*, *r*, *c*, *d*, and the three others representing the horses.

Note also, That the star *a* is called *Alioth*, *d* is called *Dubbe*, *b* and *r* are called the two *guards* or *pointers*, for they point directly in a straight line to the north pole *p*, which now is near $2\frac{1}{4}$ degrees distant from the star *s*, which is called the *north pole star*.

You may find the north pole also by the star *Alioth*, from which a straight line drawn to the pole star *s*, goes through the pole point *p*, and leaves it at $2\frac{1}{4}$ degrees distance from the pole star.

You may find it also by the little star *n*, which is the nearest star to the pole star *s*; for a line drawn from *n* to *s* is the hypothenuse of a right-angled triangle, whose right angle is in the pole point *p*.

Problem XXXII. To find the latitude by any star that is on the north meridian.

It has been already shewn, in the tenth Problem of this Section, how to find the latitude of a place by the meridian altitude of a star on the south meridian; but the methods of performance on the north meridian are different.

The first way is this: Take the altitude of it when it is upon the north meridian at five, or six, or seven o'clock in the winter, then twelve hours afterwards take its altitude again, for it will be on the meridian on the other side of the pole; subtract half the difference of those two altitudes from the greatest altitude, and the remainder is the true elevation of the pole, or latitude of the place.

The second way. Observe when the star *Alioth* comes to the meridian under the pole; then take the height of the pole star, and out of it subtract $2\frac{1}{4}$ degrees, which is the distance of the pole star from the pole, the remainder will be the true elevation of the pole, or the latitude. The reason of this operation is evident by the 30th *Figure*, for *Alioth* is on the meridian under the pole just when the pole star is on the meridian above the pole.

Note, The pole star is upon the meridian above the pole just at twelve o'clock at night on the 15th day of May, and under the meridian on the 16th day of November: Fifteen days after that it will be upon the meridian at eleven o'clock: Thirty days after at ten o'clock; so that every month it differs about two hours.

Problem XXXIII. To find the hour of the night by the stars which are on the meridian.

If you have a meridian line drawn, and such a board as I have described under the ninth use of the meridian line, you may exactly find when a star is on the meridian; and if you are well acquainted with the stars, wheresoever you set up that board upright on a meridian line, you will see what stars are on the meridian. Suppose *Aldebaran*, or the Bull's eye on the 20th of January is on the south part of the meridian; then in some tables find the sun's and that star's right ascension, add the complement of the right ascension of the sun for that day, *viz.* three hours six minutes, to the right ascension of the star, four hours seventeen minutes, and it makes seven hours twenty-three minutes, the true hour of the afternoon.

Note, If the star be on the north part of the meridian, or below the north pole, it is just the same practice as on the south: For when any star is on the meridian, the difference between the sun's right ascension and that star's right ascension is the sun's true hour, *i. e.* its distance from twelve o'clock at noon or midnight, at which time the sun is on the meridian, either south or north.

If you have no meridian line drawn, you may find within two or three degrees what

stars are on the north meridian, thus: Hold up a string and plummet and project it with your eye over-right the pole star, or rather the pole point, and observe what other stars are covered by it or close to it, for these are on or near the meridian.

Or it may be done with very little error by standing upright and looking straight forward to the pole star, with a stick or staff between your hands, then raise up the staff as straight as you can over-right the pole, and observe what stars it covers in that motion.

But these methods are rude, and only serve for vulgar purposes.

Problem XXXIV. To find at what hour of any day a known star will come upon the meridian.

Subtract the right ascension of the sun for that day from the right ascension of the star, the remainder shews how many hours after noon the star will be on the meridian. Suppose I would know at what hour the Great bear's guards or pointers will be on the meridian on the 27th of April; for they come always to the meridian nearly both at once. The right ascension of the sun that day is about two hours nineteen minutes. The right ascension of those stars is always ten hours twenty-four minutes. Subtract the sun's right ascension from the stars' right ascension, the remainder is five minutes past eight o'clock at night, and at that time will the pointers be on the meridian.

	H.	M.
Right ascension of pointers is - -	10	24
Right ascension of sun, April 27th, is -	2	19
Time of night - - - - -	8	5

Note, If the sun's right ascension be greater than the right ascension of the star, you must add twenty-four hours to the star's right ascension, and then subtract as before.

You may easily find also what day any star, suppose either of the pointers, will be on the meridian just when the sun is there, *viz.* at twelve o'clock. Find in the tables of the right ascension of the sun what day that is wherein the sun's right ascension is the same, or very near the same, with that star's, which is the 28th of August. The sun's right ascension is ten hours twenty-eight minutes, then the sun and star are both on the noon meridian near the same time. But the sun's right ascension on the 23d of February is twenty-two hours twenty-four minutes. Therefore the sun at that time is in the noon meridian when the star is in the midnight meridian, there being just twelve hours difference.

Thence you may reckon when the star will be on the meridian at any time; for about fifteen days after it will be on the meridian at eleven o'clock, thirty days after at ten o'clock. So that every month it differs about two hours; whence it comes to pass that in twelve months, its difference arising to twenty-four hours, it comes to be on the meridian again at the same time with the sun.

Problem XXXV. Having the altitude of any star given, to find the hour.

To perform this problem you should never seek the altitude of the star when it is within an hour or two of the meridian, because at that time the altitude varies so very little. When you have gotten the altitude, then seek what is the star's hour, that is, its

equatorial distance* from the meridian at that altitude, which may be done by the globe, or any quadrant, or by the analemma, just as you would seek the sun's hour if its altitude were given: After this, seek the difference between the sun's right ascension for that day and the star's right ascension, and by comparing this difference with the star's hour you will find the true hour of the night.

Note, This method of operation, though it be true in theory, yet it is tedious and very troublesome in practice. The most usual ways therefore of finding the hour of the night by the stars, whether they are on the meridian or not, is by making use of a large globe, or the instrument called a nocturnal, wherein the most remarkable stars are fixed in their proper degrees of declination and right ascension: And their relation to the sun's place in the ecliptic, and to his right ascension every day in the year, being so obvious, makes the operation of finding the true hour very easy and pleasant.

SECTION XXI.

TABLES OF THE SUN'S DECLINATION, AND OF THE DECLINATION AND RIGHT ASCENSION OF SEVERAL REMARKABLE FIXED STARS, TOGETHER WITH SOME ACCOUNT HOW THEY ARE TO BE USED.

The resolution of some of the astronomical problems by geometrical operations on the analemma requires the knowledge of the true place of the sun, his right ascension, or his declination, at any given day of the year. But since the knowledge of his declination is of most easy and convenient use herein, and since his true place in the ecliptic, as well as his right ascension, may be nearly found geometrically when his declination is given, except when near the solstices, I have not been at the pains to draw out particular tables of the sun's place, but contented myself with tables of declination for every day in the year, and tables of right ascension for every tenth day. These are sufficient for a young learner's practice in his first rudiments of astronomy. Those who make a further progress in this science, and would attain greater exactness, must seek more particular tables relating to the sun, in other larger treatises.

Here let these few things be observed:

First, These tables shew the declination of the sun each day at noon; for it is then that the astronomer's day begins. If you would therefore know the sun's declination, suppose at six o'clock in the morning of any given day, you must compare the declination for that day with the sun's declination the foregoing day, and make a proportionable allowance, *viz.* three-fourth parts of the difference of those two declinations. If at six in the afternoon, you must compare it with the following day, and allow in the same manner one fourth part.

Secondly, These tables are fitted for the meridian of London. If you would know therefore, the sun's declination the same day at noon at Port Royal in Jamaica, you must consider the difference of longitude. Now that place being about 75 degrees westward from London, that is, five hours later in time, it is but seven o'clock in the morning there when it is noon at London: And you must make a proportionable

* The sun's or star's horizontal distance from the meridian is the azimuth: It is the equatorial distance from the meridian which is called the sun's or star's hour.

allowance for the difference of the sun's declination by comparing it with that of the foregoing day. If that place had the same longitude eastward from London, it would be five o'clock in the afternoon there; and then you must compare the sun's present declination with that of the day following, and make allowance for the five hours, *i. e.* almost one fourth of the difference of the two declinations. But if you would know the sun's declination at any place and at any hour of the day at that place; find what hour it is at London at the given hour at that place, and find the declination of the sun for that hour at London by *Note* the first.

Note, These allowances must be added or subtracted according as the sun's declination is increasing or decreasing.

Yet in any of these geometrical operations the difference of the sun's declination at other hours of the day, or at other places of the world, is so exceedingly small that it is not sufficient to make any remarkable alterations, except when the sun is near the equinoxes; and then there may be some allowances made for it in the manner I have described; nor even then is there any need for any such allowances, except in places which differ from London near five or six hours in longitude.

Thirdly, Let it be noted also, that as the place of the sun, so consequently his declination and right ascension for every day do vary something every year, by reason of the odd five hours and forty-nine minutes over and above 365 days, of which the solar year consists. Therefore it was proper to represent the sun's declination every day for four years together, *viz.* the three years before leap-year, and the leap-year itself. For in the circuit of those four years the sun returns very nearly to the same declination again on the same day of the year, because those odd five hours and forty-nine minutes do in four years time make up twenty-four hours, or a whole day, wanting but four times eleven, *i. e.* forty-four minutes; which day is superadded to the leap-year, and makes the 29th of February, as hath been said before.

It is true, that in a considerable length of time these tables will want further correction, because of those forty-four minutes which are really wanting to make up the superadded day in the leap-year. But these tables will serve sufficiently for any common operations for forty or fifty years to come, provided you always consult that table which is applicable to the current year, whether it be a leap year, or the first, the second, or the third year after it.

Fourthly, Observe also, these tables of the sun's declination are sometimes reduced, as it were, to one single scale. And for this purpose men generally choose the table of declination for the second after leap-year, and this is called the mean declination, that is, the middle between the two leap-years. This is that account of the sun's place and declination, &c. which is made to be represented on all mathematical instruments, *viz.* globes, quadrants, projections of the sphere, and graduated scales, &c. and this serves for such common geometrical practices in astronomy without any very remarkable error.

Concerning the table of the fixed stars, let it be remembered that they move slowly round the globe eastward in circles parallel to the ecliptic, and therefore they increase their longitude 50 seconds of a minute every year, that is, one degree in seventy-two years. But their latitude never alters, because they always keep at the same distance from the ecliptic.

Let it be noted also, that this slow motion of the fixed stars causes their declination and their right ascension to vary, though very little, every year. Their right ascension necessarily changes because their longitude changes, though not exactly in the same quantity. And though their latitude never alters, because latitude is their distance from the ecliptic, yet their declination must alter a little, because it is their distance from the equator. But the tables of their right ascension, which I have here exhibited, will serve for any common practices for at least twenty years to come, and their declination for near fifty years, without any sensible error in such astronomical essays as these.

It may be proper here to give notice to learners, that the same stars may have north latitude and south declination; such are all those that lie between the equator and the southern half of the ecliptic: But all those stars which lie between the equator and the northern half of the ecliptic, have south latitude and north declination.

N.B. *As the Tables of the original Edition of this Work, published in the Year* 1753, *had become obsolete; in order to make the Work as complete as possible, the following Tables have been selected from* J. W. NORIE's *and* N. BOWDITCH's Practical Navigation, *and will be found to answer for near fifty years.*

A

TABLE

OF THE

SUN'S DECLINATION

FOR THE YEAR 1810,

BEING THE SECOND AFTER LEAP YEAR,

Which will serve for near Fifty Years.

Days	Jan.	Feb.	March	April	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Days
	South	South	South	North	North	North	North	North	North	South	South	South	
	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	
1	23 3	17 13	7 44	4 23	14 57	22 0	23 10	18 10	8 29	3 0	14 19	21 46	1
2	22 58	16 56	7 21	4 46	15 15	22 8	23 6	17 55	8 7	3 24	14 38	21 55	2
3	22 53	16 38	6 58	5 9	15 33	22 16	23 2	17 40	7 45	3 47	14 57	22 4	3
4	22 47	16 20	6 35	5 32	15 50	22 24	22 57	17 24	7 23	4 10	15 16	22 13	4
5	22 40	16 2	6 12	5 55	16 8	22 31	22 52	17 8	7 1	4 34	15 34	22 21	5
6	22 34	15 44	5 49	6 17	16 25	22 37	22 46	16 52	6 38	4 57	15 53	22 28	6
7	22 26	15 26	5 26	6 40	16 42	22 43	22 40	16 35	6 16	5 20	16 11	22 35	7
8	22 18	15 7	5 2	7 3	16 58	22 49	22 34	16 19	5 53	5 43	16 28	22 42	8
9	22 10	14 48	4 39	7 25	17 14	22 55	22 27	16 2	5 31	6 6	16 46	22 48	9
10	22 2	14 28	4 16	7 47	17 30	23 0	22 20	15 44	5 8	6 29	17 3	22 54	10
11	21 53	14 9	3 52	8 9	17 46	23 4	22 12	15 27	4 45	6 51	17 20	23 0	11
12	21 43	13 49	3 29	8 31	18 1	23 8	22 4	15 9	4 22	7 14	17 36	23 5	12
13	21 33	13 29	3 5	8 53	18 17	23 12	21 56	14 51	3 59	7 37	17 53	23 9	13
14	21 23	13 9	2 41	9 15	18 31	23 16	21 47	14 33	3 36	7 59	18 9	23 13	14
15	21 12	12 49	2 18	9 37	18 46	23 19	21 38	14 14	3 13	8 22	18 24	23 16	15
16	21 1	12 28	1 54	9 58	19 0	23 21	21 29	13 55	2 50	8 44	18 39	23 19	16
17	20 50	12 7	1 30	10 19	19 14	23 23	21 19	13 36	2 27	9 6	18 54	23 22	17
18	20 38	11 46	1 7	10 40	19 27	23 25	21 9	13 17	2 4	9 28	19 9	23 24	18
19	20 25	11 25	0 43	11 1	19 41	23 26	20 58	12 58	1 40	9 50	19 23	23 26	19
20	20 13	11 3	0 19 S	11 22	19 53	23 27	20 47	12 38	1 17	10 11	19 37	23 27	20
21	20 0	10 42	0 4 N	11 43	20 6	23 28	20 36	12 18	0 54	10 33	19 51	23 28	21
22	19 46	10 20	0 28	12 3	20 18	23 28	20 24	11 58	0 30	10 54	20 4	23 28	22
23	19 32	9 58	0 52	12 23	20 30	23 28	20 13	11 38	0 7 N	11 16	20 17	23 28	23
24	19 18	9 36	1 15	12 43	20 41	23 27	20 0	11 18	0 16 S	11 37	20 30	23 27	24
25	19 4	9 14	1 39	13 3	20 53	23 26	19 48	10 57	0 40	11 58	20 42	23 26	25
26	18 49	8 52	2 2	13 22	21 3	23 24	19 35	10 36	1 3	12 18	20 53	23 24	26
27	18 34	8 29	2 26	13 42	21 14	23 22	19 21	10 15	1 27	12 39	21 5	23 22	27
28	18 18	8 7	2 49	14 1	21 24	23 20	19 8	9 54	1 50	12 59	21 16	23 19	28
29	18 2		3 13	14 20	21 33	23 17	18 54	9 33	2 14	13 20	21 26	23 16	29
30	17 46		3 36	14 38	21 43	23 14	18 40	9 12	2 37	13 39	21 36	23 13	30
31	17 30		3 59		21 52		18 25	8 50		13 59		23 9	31

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TABLE

OF THE

SUN's DECLINATION,

FOR THE YEAR 1811,

BEING THE THIRD AFTER LEAP YEAR.

Which will serve for near Fifty Years.

Days	Jan. South	Feb. South	March South	April North	May North	June North	July North	Aug. North	Sept. North	Oct. South	Nov. South	Dec. South	Days
	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	
1	23 4	17 17	7 49	4 17	14 52	21 58	23 11	18 14	8 34	2 55	14 14	21 44	1
2	22 59	17 0	7 27	4 40	15 10	22 6	23 7	17 59	8 12	3 18	14 33	21 53	2
3	22 54	16 42	7 4	5 3	15 28	22 14	23 3	17 44	7 50	3 41	14 52	22 2	3
4	22 48	16 25	6 41	5 26	15 46	22 22	22 58	17 28	7 28	4 5	15 11	22 11	4
5	22 42	16 7	6 18	5 49	16 3	22 29	22 53	17 12	7 6	4 28	15 30	22 19	5
6	22 35	15 49	5 55	6 12	16 21	22 36	22 48	16 56	6 44	4 51	15 48	22 26	6
7	22 28	15 30	5 31	6 35	16 38	22 42	22 42	16 39	6 21	5 14	16 6	22 34	7
8	22 20	15 11	5 8	6 57	16 54	22 48	22 35	16 23	5 59	5 37	16 24	22 41	8
9	22 12	14 52	4 45	7 20	17 10	22 53	22 29	16 6	5 36	6 0	16 41	22 47	9
10	22 4	14 33	4 21	7 42	17 27	22 58	22 22	15 48	5 14	6 23	16 59	22 53	10
11	21 55	14 14	3 58	8 4	17 42	23 3	22 14	15 31	4 51	6 46	17 16	22 58	11
12	21 46	13 54	3 34	8 26	17 58	23 7	22 6	15 13	4 28	7 9	17 32	23 3	12
13	21 36	13 34	3 11	8 48	18 13	23 11	21 58	14 55	4 5	7 31	17 49	23 8	13
14	21 26	13 14	2 47	9 10	18 28	23 15	21 49	14 37	3 42	7 54	18 5	23 12	14
15	21 15	12 54	2 23	9 31	18 42	23 18	21 40	14 18	3 19	8 16	18 20	23 16	15
16	21 4	12 33	2 0	9 53	18 57	23 21	21 31	14 0	2 56	8 38	18 36	23 19	16
17	20 53	12 12	1 36	10 14	19 11	23 23	21 21	13 41	2 33	9 1	18 51	23 21	17
18	20 41	11 51	1 12	10 35	19 24	23 25	21 11	13 22	2 9	9 23	19 6	23 24	18
19	20 28	11 30	0 49	10 56	19 37	23 26	21 1	13 2	1 46	9 45	19 20	23 25	19
20	20 16	11 9	0 25	11 17	19 50	23 27	20 50	12 43	1 23	10 6	19 34	23 27	20
21	20 3	10 47	0 1 S	11 38	20 3	23 28	20 39	12 23	0 59	10 28	19 48	23 28	21
22	19 50	10 25	0 22 N	11 58	20 15	23 28	20 27	12 3	0 36	10 49	20 1	23 28	22
23	19 36	10 4	0 46	12 18	20 27	23 28	20 15	11 43	0 13 N	11 11	20 14	23 28	23
24	19 22	9 42	1 10	12 38	20 39	23 27	20 5	11 23	0 11 S	11 32	20 27	23 27	24
25	19 7	9 19	1 33	12 58	20 50	23 26	19 51	11 2	0 34	11 53	20 39	23 26	25
26	18 52	8 57	1 57	13 18	21 1	23 25	19 38	10 41	0 58	12 14	20 51	23 25	26
27	18 37	8 35	2 20	13 37	21 11	23 23	19 25	10 20	1 21	12 34	21 2	23 23	27
28	18 22	8 12	2 44	13 56	21 21	23 20	19 11	9 59	1 45	12 54	21 13	23 20	28
29	18 6		3 7	14 15	21 31	23 18	18 57	9 38	2 8	13 15	21 24	23 17	29
30	17 50		3 31	14 34	21 41	23 15	18 43	9 17	2 31	13 35	21 34	23 14	30
31	17 34		3 54		21 50		18 29	8 55		13 54		23 10	31

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TABLE

OF THE

SUN'S DECLINATION,

FOR THE YEAR 1812,

BEING BISSEXTILE, OR LEAP YEAR,

Which will serve for near Fifty Years.

Days	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Days
	South	South	South	North	North	North	North	North	North	South	South	South	
	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	d. m.	
1	23 5	17 21	7 32	4 35	15 6	22 4	23 8	18 3	8 17	3 12	14 29	21 51	1
2	23 1	17 4	7 9	4 58	15 24	22 12	23 4	17 47	7 55	3 36	14 48	22 0	2
3	22 55	16 47	6 46	5 21	15 42	22 20	22 59	17 32	7 33	3 59	15 7	22 9	3
4	22 50	16 29	6 23	5 44	15 59	22 27	22 54	17 16	7 11	4 22	15 25	22 17	4
5	22 44	16 11	6 0	6 6	16 16	22 34	22 49	17 0	6 49	4 45	15 44	22 25	5
6	22 37	15 53	5 37	6 29	16 33	22 40	22 43	16 43	6 27	5 9	16 2	22 32	6
7	22 30	15 35	5 14	6 52	16 50	22 46	22 37	16 27	6 4	5 32	16 20	22 39	7
8	22 22	15 16	4 50	7 14	17 7	22 52	22 30	16 10	5 42	5 55	16 37	22 45	8
9	22 14	14 57	4 27	7 37	17 23	22 57	22 23	15 53	5 19	6 18	16 55	22 51	9
10	22 6	14 38	4 3	7 59	17 39	23 2	22 16	15 35	4 56	6 40	17 12	22 57	10
11	21 57	14 18	3 40	8 21	17 54	23 6	22 8	15 17	4 33	7 3	17 28	23 2	11
12	21 48	13 59	3 16	8 43	18 9	23 10	22 0	14 59	4 10	7 26	17 45	23 7	12
13	21 38	13 39	2 53	9 5	18 24	23 14	21 51	14 41	3 47	7 48	18 1	23 11	13
14	21 28	13 19	2 29	9 26	18 39	23 17	21 42	14 23	3 24	8 11	18 17	23 15	14
15	21 18	12 58	2 5	9 48	18 53	23 20	21 33	14 4	3 1	8 33	18 32	23 18	15
16	21 7	12 38	1 42	10 9	19 7	23 22	21 24	13 45	2 38	8 55	18 47	23 21	16
17	20 55	12 17	1 18	10 30	19 21	23 24	21 14	13 26	2 15	9 17	19 2	23 23	17
18	20 44	11 56	0 54	10 51	19 34	23 26	21 3	13 7	1 52	9 39	19 16	23 25	18
19	20 31	11 35	0 31	11 12	19 47	23 27	20 52	12 48	1 28	10 1	19 31	23 26	19
20	20 19	11 14	0 7 S	11 33	20 0	23 28	20 41	12 28	1 5	10 23	19 44	23 27	20
21	20 6	10 52	0 17 N	11 55	20 12	23 28	20 30	12 8	0 42	10 44	19 58	23 28	21
22	19 53	10 31	0 40	12 13	20 24	23 28	20 18	11 48	0 18 N	11 5	20 11	23 28	22
23	19 39	10 9	1 4	12 33	20 36	23 27	20 6	11 28	0 5 S	11 27	20 23	23 27	23
24	19 25	9 47	1 28	12 53	20 47	23 26	19 54	11 7	0 29	11 48	20 36	23 26	24
25	19 11	9 25	1 51	13 13	20 58	23 25	19 41	10 46	0 52	12 8	20 48	23 25	25
26	18 56	9 3	2 15	13 32	21 9	23 23	19 28	10 26	1 15	12 29	20 59	23 23	26
27	18 41	8 40	2 38	13 52	21 19	23 21	19 14	10 5	1 39	12 49	21 10	23 21	27
28	18 26	8 18	3 2	14 11	21 29	23 18	19 1	9 43	2 2	13 10	21 21	23 18	28
29	18 10	7 55	3 25	14 29	21 38	23 15	18 47	9 22	2 26	13 30	21 31	23 15	29
30	17 54		3 48	14 48	21 47	23 12	18 32	9 1	2 49	13 50	21 41	23 11	30
31	17 38		4 11		21 56		18 18	8 39		14 9		23 7	31

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TABLE

OF THE

SUN'S DECLINATION,

FOR THE YEAR 1813,

BEING THE FIRST AFTER LEAP YEAR,

Which will serve for near Fifty Years.

Days	Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Days
	South		South		South		North		North		North		North		North		North		South		South		South		
	d.	m.	d.	m.	d.	m.	d.	m.	d.	m.	d.	m.	d.	m.	d.	m.	d.	m.	d.	m.	d.	m.	d.	m.	
1	23	2	17	8	7	38	4	29	15	2	22	2	23	9	18	7	8	23	3	6	14	23	21	48	1
2	22	57	16	51	7	15	4	52	15	20	22	10	23	5	17	52	8	2	3	29	14	42	21	58	2
3	22	51	16	33	6	52	5	15	15	37	22	18	23	0	17	36	7	40	3	53	15	1	22	6	3
4	22	45	16	15	6	29	5	38	15	55	22	25	22	55	17	20	7	17	4	16	15	20	22	15	4
5	22	38	15	57	6	6	6	1	16	12	22	32	22	50	17	4	6	55	4	39	15	39	22	23	5
6	22	31	15	39	5	43	6	24	16	29	22	39	22	44	16	48	6	33	5	2	15	57	22	30	6
7	22	24	15	20	5	19	6	46	16	46	22	45	22	38	16	31	6	10	5	25	16	15	22	37	7
8	22	16	15	1	4	56	7	9	17	3	22	51	22	32	16	15	5	48	5	48	16	32	22	44	8
9	22	8	14	42	4	33	7	31	17	19	22	56	22	25	15	57	5	25	6	11	16	50	22	50	9
10	21	59	14	23	4	9	7	53	17	35	23	1	22	18	15	40	5	3	6	34	17	7	22	56	10
11	21	50	14	3	3	46	8	16	17	50	23	5	22	10	15	22	4	40	6	57	17	24	23	1	11
12	21	40	13	44	3	22	8	38	18	6	23	9	22	2	15	5	4	17	7	20	17	40	23	6	12
13	21	30	13	24	2	58	8	59	18	21	23	13	21	53	14	46	3	54	7	42	17	56	23	10	13
14	21	20	13	3	2	35	9	21	18	35	23	16	21	45	14	28	3	31	8	5	18	12	23	14	14
15	21	9	12	45	2	11	9	43	18	50	23	19	21	35	14	9	3	8	8	27	18	28	23	17	15
16	20	58	12	22	1	48	10	4	19	4	23	22	21	26	13	51	2	45	8	49	18	43	23	20	16
17	20	46	12	1	1	24	10	25	19	17	23	24	21	16	13	32	2	21	9	11	18	58	23	23	17
18	20	34	11	40	1	0	10	46	19	31	23	25	21	6	13	12	1	58	9	33	19	13	23	25	18
19	20	22	11	19	0	36	11	7	19	44	23	27	20	55	12	53	1	35	9	55	19	27	23	26	19
20	20	9	10	57	0	13	11	28	19	57	23	27	20	44	12	33	1	11	10	17	19	41	23	27	20
21	19	56	10	36	0	11 N	11	48	20	9	23	28	20	33	12	13	0	48	10	38	19	54	23	28	21
22	19	42	10	14	0	35	12	8	20	21	23	28	20	22	11	53	0	25	11	0	20	7	23	28	22
23	19	29	9	52	0	58	12	29	20	23	23	28	20	10	11	33	0	1 N	11	21	20	20	23	28	23
24	19	14	9	30	1	22	12	48	20	44	23	27	19	57	11	13	0	22 S	11	42	20	33	23	27	24
25	19	0	9	8	1	45	13	8	20	55	23	25	19	45	10	52	0	46	12	3	20	45	23	26	25
26	18	45	8	46	2	9	13	28	21	6	23	24	19	32	10	31	1	9	12	23	20	56	23	24	26
27	18	29	8	23	2	32	13	47	21	16	23	22	19	18	10	10	1	32	12	44	21	7	23	21	27
28	18	14	8	0	2	56	14	6	21	26	23	19	19	5	9	49	1	56	13	4	21	18	23	19	28
29	17	58			3	19	14	25	21	36	23	16	18	51	9	28	2	19	13	24	21	29	23	16	29
30	17	41			3	43	14	43	21	45	23	13	18	36	9	7	2	43	13	44	21	39	23	12	30
31	17	25			4	6			21	54			18	22	8	45			14	4			23	8	31

A TABLE

OF THE

Right Ascensions and Declinations of the principal Fixed Stars,

ADAPTED TO THE BEGINNING OF THE YEAR 1800.

Constellations. Pr. Names.	Magnitudes.	RIGHT ASCENSION IN Time.	an.Var.	Degrees.	an.Var.	Declination	an.Var.
		h. m. s.	s.	° ′ ″	″	° ′ ″	″
Pegasus ..... *Algenib*	2	0 2 57	3.06	0 44 12	45.9	14 4 15N	+20.0
Phœnix	2	0 16 22	2.99	4 5 25	44.8	43 23 12S	—20.0
Ursa Minor .... *Pole Star*	2	0 52 21	12.89	13 5 12	193.3	88 14 25N	+19.6
Andromeda .... *Mirach*	2	0 58 34	3.30	14 38 33	49.5	34 33 33N	+19.4
R. Eridanus .... *Achernar*	1	1 30 15	2.25	22 33 51	33.7	58 19 42S	—18.5
ARIETIS	2	1 55 55	3.33	28 58 49	50.0	22 30 41N	+17.5
Cetus	Var.	2 9 15	3.02	32 18 40	45.3	3 53 16S	—17.0
Cetus ..... *Menkar*	2	2 51 50	3.12	42 57 31	46.7	3 17 58N	+14.6
Perseus ..... *Algol*	Var.	2 55 12	3.85	43 48 1	57.7	40 10 32N	+14.4
Perseus	2	3 10 7	4.20	47 31 43	63.1	49 8 13N	+13.5
Taurus ..... ALDEBARAN ..	1	4 24 27	3.42	66 6 49	51 3	16 5 44N	+ 8.1
Auriga ..... *Capella*	1	5 1 56	4.41	75 29 2	66.2	45 46 51N	+ 5.0
Orion ..... *Rigel*	1	5 4 55	2.87	76 13 53	43.0	8 26 34S	— 4.8
Taurus	2	5 13 39	3.73	78 24 51	56.7	28 25 30N	+ 4.0
Orion ..... *Bellatrix*	2	5 14 25	3.21	78 36 8	48.1	6 9 23N	+ 4.0
Orion	2	5 21 48	3.06	80 26 54	45.9	0 28 23S	— 3.3
Columba	2	5 32 25	2.17	83 6 15	32.5	34 11 15S	— 2.4
Orion ..... *Betelguese*	1	5 44 21	3.24	86 5 9	48.6	7 21 27N	+ 1.4
Argo ..... *Canopus*	1	6 19 31	1.53	94 52 46	20.0	52 35 28S	+ 1.7
Canis Major .... *Sirius*	1	6 36 20	2.65	99 4 59	39.7	16 27 5S	+ 4.3
Canis Major	2	7 0 16	2.44	105 3 54	36.5	26 5 5S	+ 5.2
Canis Major	2	7 16 11	2.37	109 6 46	35.6	28 55 11S	+ 6.5
Gemini ..... *Castor*	1	7 21 49	3.85	110 27 12	57.8	32 18 49N	— 6.9
Canis Minor .. *Procyon*	1	7 28 49	3.14	112 12 16	47.1	5 44 11N	— 7.5
Gemini ..... POLLUX	2	7 33 3	3.69	113 15 48	55.3	28 29 47N	— 7.9
Argo Navis	2	7 56 34	2.11	119 8 30	31.7	39 26 44S	+ 9.7
Argo Navis	2	8 3 23	1.85	120 50 49	27.8	46 45 6S	+10.3
Argo Navis	2	8 39 12	1.66	129 47 52	24.9	53 58 41S	+12.8
Argo Navis	1	9 10 59	0.75	137 44 47	11.2	68 53 46S	+14.8
Hydra ..... *Alphard*	2	9 17 45	2.93	139 26 15	44.0	7 47 54S	+15.2
Leo ..... REGULUS	1	9 57 42	3.20	149 25 30	48.1	12 56 21N	—17.2
Ursa Major	2	10 49 40	3.71	162 24 55	55.6	57 27 1N	—19.1
Ursa Major .... *Dubbe*	1	10 51 16	3.85	162 48 53	57.7	62 49 47N	—19.2
Leo ..... *Deneb*	1	11 38 50	3.06	174 42 37	45.9	15 41 29N	—19.9
Crux	1	12 15 37	3.24	183 54 18	48.6	61 59 26S	+20.0
Crux	2	12 36 10	3.41	189 2 24	51.2	58 35 38S	+19.7
Virgo ..... SPICA	1	13 14 40	3.14	198 40 2	47.0	10 6 41S	+18.9
Ursa Major .... *Benetnach*	2	13 39 39	2.39	204 54 43	35.9	50 19 2N	—18.1
Centaur	1	13 49 52	4.11	207 27 55	61.6	59 23 53S	+17.7
Draco	3	13 58 59	1.63	209 44 43	24.4	65 20 9N	—17.4
Bootes ..... *Arcturus*	1	14 6 32	2.72	211 38 3	40.8	20 13 45N	—19.1
Centaur	1	14 26 32	4.45	216 37 55	66.7	60 0 37S	+16.1
Libra ..... *Zubenesch*	2	14 39 50	3.29	219 57 30	49.3	15 12 0S	+15.3
Libra ..... *Zubenelg*	2	15 6 16	3.22	226 33 54	48.2	8 38 3S	+13.8
Corona Bor. .... *Alphacca*	2	15 26 13	2.53	231 33 17	37.9	27 23 55N	—12.4
Serpens	2	15 34 25	2.94	233 36 18	44.0	7 3 57N	—11.9
Scorpio ..... ANTARES	1	16 17 10	3.64	244 17 25	54.7	25 58 22S	+ 8.7
Hercules ..... *Ras Algethi* ...	2	17 5 32	2.73	256 22 56	40.9	14 37 45N	— 4.7
Ophiuchus ..... *Ras Alhague* ..	2	17 25 39	2.77	261 24 45	41.5	12 43 7N	— 3.0
Draco ..... *Rastaban*	3	17 51 58	1.39	267 59 27	20.8	51 31 5N	— 0.7
Lyra ..... *Vega*	1	18 30 10	2.03	277 32 28	30.4	38 36 14N	+ 2.6
AQUILÆ ..... ALTAIR	1	19 41 1	2.92	295 15 15	43.8	8 20 57N	+ 8.5
Pavo	1	20 9 44	4.84	302 25 59	72.6	57 21 35S	—10.7
CAPRICORNI	3	20 9 45	3.38	302 26 23	50.7	15 24 7S	—10.7
Cygnus ..... *Deneb*	1	20 34 37	2.03	308 39 10	30.5	44 34 20N	+12.5
Grux	2	21 55 33	3.85	328 53 18	57.7	44 55 8S	—17.1
Pisces Australis . FOMALHAUT ..	1	22 46 34	3.33	341 38 24	49.9	30 40 36S	—19.0
Pegasus ..... *Scheat*	2	22 54 5	2.87	343 31 22	43.1	26 59 57N	+19.2
Pegasus ..... MARCAB	2	22 54 48	2.96	343 42 0	44.5	14 7 58N	+19.2
Andromeda .... *Alpharatz*	2	23 58 4	3.06	359 31 5	46.0	27 59 13N	+20.0

Note. For any years after 1800, the variation in right ascension must be added to the right ascension in the Table; and the variation in declination must be either added to, or subtracted from it, according as their signs are, to fit the declination to any succeeding year.—The annual variation is set down for seconds and decimals of a second.

A

TABLE

OF THE

SUN'S RIGHT ASCENSION,

Days	Jan.		Feb.		Mar.		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Days
	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	
1	18	45	20	57	22	48	0	41	2	32	4	35	6	39	8	44	10	40	12	28	14	24	16	28	1
2	18	49	21	1	22	51	0	45	2	36	4	39	6	43	8	48	10	44	12	32	14	28	16	33	2
3	18	54	21	6	22	55	0	48	2	40	4	43	6	47	8	52	10	47	12	36	14	32	16	37	3
4	18	58	21	10	22	59	0	52	2	44	4	47	6	51	8	56	10	51	12	39	14	36	16	41	4
5	19	3	21	14	23	2	0	56	2	48	4	51	6	56	8	59	10	55	12	43	14	40	16	46	5
6	19	7	21	18	23	6	0	59	2	51	4	55	7	0	9	3	10	58	12	46	14	44	16	50	6
7	19	11	21	22	23	10	1	3	2	55	4	59	7	4	9	7	11	2	12	50	14	48	16	54	7
8	19	16	21	26	23	14	1	7	2	59	5	4	7	8	9	11	11	5	12	54	14	52	16	59	8
9	19	20	21	30	23	17	1	10	3	3	5	8	7	12	9	15	11	9	12	57	14	56	17	3	9
10	19	24	21	34	23	21	1	14	3	7	5	12	7	16	9	19	11	13	13	1	15	0	17	7	10
11	19	29	21	38	23	25	1	18	3	11	5	16	7	20	9	22	11	16	13	5	15	4	17	12	11
12	19	33	21	41	23	28	1	21	3	15	5	20	7	24	9	26	11	20	13	8	15	8	17	16	12
13	19	37	21	45	23	32	1	25	3	19	5	24	7	28	9	30	11	23	13	12	15	12	17	21	13
14	19	42	21	49	23	36	1	29	3	23	5	28	7	32	9	34	11	27	13	16	15	17	17	25	14
15	19	46	21	53	23	39	1	32	3	27	5	33	7	36	9	37	11	31	13	20	15	21	17	30	15
16	19	50	21	57	23	43	1	36	3	30	5	37	7	40	9	41	11	34	13	23	15	25	17	34	16
17	19	55	22	1	23	47	1	40	3	34	5	41	7	45	9	45	11	38	13	27	15	29	17	38	17
18	19	59	22	5	23	50	1	43	3	38	5	45	7	49	9	49	11	41	13	31	15	33	17	43	18
19	20	3	22	9	23	54	1	47	3	42	5	49	7	53	9	52	11	45	13	35	15	37	17	47	19
20	20	7	22	13	23	58	1	51	3	46	5	53	7	57	9	56	11	49	13	38	15	41	17	52	20
21	20	12	22	16	0	1	1	55	3	50	5	58	8	1	10	0	11	52	13	42	15	46	17	56	21
22	20	16	22	20	0	5	1	58	3	54	6	2	8	5	10	4	11	56	13	46	15	50	18	1	22
23	20	20	22	24	0	8	2	2	3	58	6	6	8	9	10	7	11	59	13	50	15	54	18	5	23
24	20	24	22	28	0	12	2	6	4	2	6	10	8	13	10	11	12	3	13	54	15	58	18	9	24
25	20	28	22	32	0	16	2	10	4	6	6	14	8	17	10	15	12	7	13	57	16	2	18	14	25
26	20	33	22	35	0	19	2	13	4	10	6	18	8	20	10	18	12	10	14	1	16	7	18	18	26
27	20	37	22	39	0	23	2	17	4	14	6	22	8	24	10	22	12	14	14	5	16	11	18	23	27
28	20	41	22	43	0	27	2	21	4	19	6	27	8	28	10	26	12	17	14	9	16	15	18	27	28
29	20	45	22	45	0	30	2	25	4	23	6	31	8	32	10	29	12	21	14	13	16	20	18	32	29
30	20	49			0	34	2	28	4	27	6	35	8	36	10	33	12	25	14	17	16	24	18	36	30
31	20	53			0	37			4	31			8	40	10	37			14	21			18	41	31

PHILOSOPHICAL ESSAYS

ON

VARIOUS SUBJECTS,

NAMELY,

SPACE, SUBSTANCE, BODY, SPIRIT, THE OPERATIONS OF THE SOUL IN UNION WITH THE BODY, INNATE IDEAS, PERPETUAL CONSCIOUSNESS, PLACE AND MOTION OF SPIRITS, THE DEPARTING SOUL, THE RESURRECTION OF THE BODY, THE PRODUCTION AND OPERATIONS OF PLANTS AND ANIMALS:

WITH SOME REMARKS ON

MR. LOCKE'S ESSAY

ON THE

HUMAN UNDERSTANDING.

THE PREFACE.

AMONG the various philosophical inquiries which my younger studies had committed to writing, these few have escaped the injuries of time and other accidents, and by the persuasion of a learned friend are now offered to the public view. Some of them may date their original at the distance of thirty years: Many new books have since appeared in the world, and new conversations have arisen, which have sometimes given occasion for the fresh exercise of my thoughts on these subjects. And since my more important duties have allowed me some hours of leisure and amusement, I have now and then added to these papers, which are now grown up to this bulk and form.

The subjects treated of in the two first Essays, *viz.* Space, Substance, Body, and Spirit, have no inconsiderable influence in adjusting our ideas of God and creatures, animate and inanimate beings. It is strange that philosophers, even in this enlightened age, this age of juster reasoning, should run into such wide extremes in their opinions concerning space; that while some depress it below all real being, and suppose it to be mere nothing, others exalt it to the nature and dignity of godhead. It would be a great happiness if we could all unite in some settled and undoubted opinion on this subject. The unlearned may ridicule the controversy, but men of science know the difficulties that attend it. I make no pretence to have cleared them all away; but if I have said any thing here that may strike a glimpse of light into this obscure question, I shall acknowledge my felicity.

Body and spirit are the two only proper substances that we know of; and if their distinct essences can be limited and adjusted in clear ideas, it will be a happy clue to lead us into some further knowledge of the visible and invisible world, and will give us a more particular and distinct acquaintance with human nature, which is compounded of matter and mind.

There are few studies so worthy of man as the knowledge of himself. Many advantages in moral sciences attend a right notion of the union of soul and body, the sensations, the appetites, the passions, and various operations which are derived thence. This hath been, I confess, a favourite employment of my thoughts: Whether I have succeeded in any of my meditations or sentiments on this subject, I must leave the reader to judge.

I cannot pretend that all my opinions in these matters are exactly squared to any public hypothesis. From the infancy of my studies, I began to be of the eclectic sect. Some of these essays are founded on the Cartesian doctrine of spirits, though several principles in his system of the material world could never prevail upon my assent; and what other opinions of that philosophy relating to the phœnomena of heaven and earth I had imbibed in the academy, I have seen reason to resign long ago at the foot of Sir Isaac Newton. But as the two worlds of matter and mind stand at an utter and extreme distance from each other, so the weakness of the Cartesian hypothesis of bodies and its utter demolition, does by no means draw with it the ruin of his doctrine of spirits.

I am not so attached to this scheme, nor do I plead for it as a doctrine full of light and evidence, and which has no doubts and difficulties attending it: After all my

studious inquiries into this noble subject, I am far from being arrived at an assurance of the truth of these opinions. The speediest way to full assurance in any point, is to read only one side of a controversy: These are generally the confident and infallible dictators to mankind; they see no difficulty, and admit no doubt. I must confess, I have followed a different method of study, and therefore I have so few indubitables among my philosophical acquirements. But though I cannot pronounce certainty on my sentiments on this argument, yet I have been loth to renounce and obliterate them at once, and to leave so vast a vacancy among my intellectual ideas, unless I could have found some tolerable system of the nature and operations of our souls to put in the room of it, which was attended with less or fewer difficulties. But this I have sought in vain, both in my own meditations, and among the works of the learned. An inextended spirit, without proper proximities to place or body, is a hard idea to us, while we dwell in this incarnate state among shapes and matter, place and motion; but a spirit that is extended, or a thinking power with dimensions and shape, with local parts and motion, appears to me still a harder idea, and gives greater pain and difficulty to the mind that will pursue any position through all its train of consequences.

I think I have no partiality for the name of the French philosopher: But let every man who has sent any new beams of light into the world of nature, and taught us better to understand the works of God, have the just debt of honour paid to his memory. Let the illustrious name of Newton stand highest in the sphere, and without a rival. But let those also who have opened the way for so great a light to shine, by removing the rubbish and darkness of former ages, have their proper monuments of praise. Had not a Des Cartes risen up in the world and traced his way before, I much question whether Sir Isaac Newton had ever made so vast and sublime a progress in the discovery of his wonders to this enlightened age. If I can pretend to any freedom of thought in my little sphere of inquiry after truth, I must ascribe the original of it to my reading the first book of Des Cartes's *Principles* in the very beginning of my studies, and the familiar comments which I heard on that work. That great man, in some of his writings, pointed out the road to true philosophy, by reason, and experiment, and mathematical science; though he did not steadily pursue that track himself, in his own philosophising on corporeal things. Gassendus and the Lord Bacon went a little before him; Mr. Boyle followed after; and they all carried on the noble design of freeing the world from the long slavery of Aristotle and substantial forms of occult qualities, and words without ideas. They taught mankind to trace out truth by reasoning and experiment; and they agreed to leave her to stand on her own foundations, without the support of an *ipse dixit*. The present age, in all their boasted and glorious acquisitions of knowledge, owe more to these gentlemen, than I have found some of them willing to pay.

Mr. Locke is another illustrious name. He has proceeded to break our philosophical fetters, and to give us further release from the bondage of ancient authorities and maxims. I acknowledge the light and satisfaction which I have derived from many of his works. His admirable *Letter of Toleration* led me as it were into a new region of thought, wherein I found myself surprised and charmed with truth. There was no room to doubt in the midst of sun-beams. These leaves triumphed over all the remnant of my prejudices on the side of bigotry, and taught me to allow all men the same freedom to choose their religion, as I claim to choose my own. Blessed be God, that this doctrine

has now taken such root in Great Britain, that I trust neither the powers nor the frauds of Rome, nor the malice, pride, and darkness of mankind, nor the rage of hell shall ever prevail against it.

His treatises *Of the Original of Government*, and *Of Education*, have laid the foundations of true liberty, and the rules of just restraint for the younger and elder years of man. His writings relating to Christianity, have some excellent thoughts in them; though I fear he has sunk some of the divine themes and glories of that dispensation too much below their original design.

His *Essay on the Human Understanding* has diffused fairer light through the world in numerous affairs of science and of human life. There are many admirable chapters in that book, and many truths in them, which are worthy of letters of gold. But there are some opinions in his philosophy, especially relating to intellectual beings, their powers and operations, which have not gained my assent. The man who hath laboured to lead the world into freedom of thought, has thereby given a large permission to his readers to propose what doubts, difficulties, or remarks, have arisen in their minds, while they peruse what he has written. And, indeed several of the Essays which are published, besides the XIIth, which bears that title, are the fruits of such remarks, as will be easily observed on the perusal of them.

The Essays on the various works of nature in the upper and lower parts of the creation, in the sun and stars, in plants and animals, were written at first with a design to entertain the politer part of mankind, whose circumstances of life indulge them much leisure and ease, and who search not very far into the hidden principles of nature, and their abstruse springs of operation. I know the philosophers of the present age have carried their inquiries to great lengths, beyond any of my meditations: Yet, perhaps, these may be so happy as to lead those persons who know them not, and who search no farther than I do into an exalted idea of the wonders of divine wisdom in the heavens and the earth, the vegetable and the animal world. Perhaps also they may serve to give no unprofitable amusement to their leisure hours, as the composure of them hath given to me.

[And here I would take notice, that in the second edition, in the first and second Sections of the ninth Essay, and the Appendix thereto, I have added a few sentences to express my thoughts more clearly concerning the everlasting but uniform agency of God on the material world, in the production of plants and animals; and to guard against those objections which the Rev. Dr. Denne offers with great civility in his preface to his late ingenious sermon of the wisdom of God in the vegetable creation, and acknowledge it was my want of greater expressness which might lead him into a mistake of my sentiments. Though we both pursue the same end, *viz.* the display of the wisdom of God in the animal and vegetable worlds, yet I beg leave to make use of a very different opinion as the means of attaining it.]

If I were to make apologies for publishing any thing of this kind to the world, I would say that the chief part of these subjects are not beneath the notice and inquiry of any profession and character whatsoever. If I am charged with repeating the same thing several times, I would reply, that it is perhaps introduced on different occasions, or set in a different light, or at least, to speak plainly, when I had wrote one, I had forgot the other, these papers being written at many years distance. And this may serve also among persons of temper and candour to apologise for small mistakes, if there

should be any appearing opposition between my expressions in different Essays, which were written in distant parts of life. I hope none will be found so gross, but may be well reconciled by a candid reader.

Shall I be told that other writers have said the very same things which I have done, and in a much better manner? I confess I know it not; for though I now and then look into modern books of philosophy, yet there are many which I have never seen, having not sufficient time to peruse them; and I am persuaded some of these Essays were framed long before those very works, whence some persons may imagine I have borrowed several of my reasonings.

If there be any hint or thought amongst them all that may assist the reader in his conceptions of God or of himself, of natural or divine things, let him correct or retrench, let him refine, let him alter or improve it as he pleases, and make it his own, that I may thank him for it as a new acquisition: And let him renounce whatsoever he finds disagreeable to truth, reason, or religion; always remembering that the surest way to find out truth, is not by a disputing spirit, and seeking out all possible objections, but by an inward love of truth, by impartial meditation, and search after clear ideas.

Perhaps I might be a little pleased with some of these philosophemes in the warmer years of life; but I look upon them now with much indifference, as things afar off, and which have passed in another century. I review them as it were with the eye of a stranger, rather than with the fondness of a young author. What darknesses hang about them, I should be glad to see scattered by the rays of truth, or to hear of a much clearer and fairer hypothesis of the world of spirits substituted in the room of all that I have written, and I should embrace it with new and sincere delight.

But if we can know nothing further of our souls, *i. e.* of ourselves, in this embodied and obscure state, than merely to say we are thinking beings, if it is not allowed us to be further acquainted with our own essence or our natural powers, if we can never find out how our spirits form their ideas, or exert their freedom of will, how we move our bodies or change our relations of place, it becomes us to lie humble at the foot of our Maker, the infinite and almighty Spirit, and to content ourselves under our present ignorance. It is happy for us, that this does not affect our moral and more important concerns: This does not alter our relations or our duties to God or our neighbour, nor make any inroad upon our divine and everlasting interests. It would be very pleasing indeed to walk onward through this dark world with some clear notions of what we ourselves are and shall be, as well as of the power that made us; but our incurable defects in this sort of science shall never seclude us from his favour. We may learn to *know the only true God* so far as to adore and obey him, without pronouncing concerning the essence of the great unsearchable. *We may know him*, and love him as the original *Father of all, and his Son Jesus whom he has sent. This is life eternal.* And when we shall have travelled over the stage of time, by the light and influence of this knowledge, we shall forsake at once these scenes of mortality and shadows; we shall change this dusky region for a brighter. Farewel books, and disputes, and dark notions, and lame hypotheses! We enter into the state of unbodied minds, we are surrounded with the light of paradise, we shall see ourselves and our fellow-spirits; there we shall commence our happy immortality in those pure and exquisite delights of unerring contemplation and undecaying love.

January 17*th*, 1732-3.

PHILOSOPHICAL ESSAYS, &c.

ESSAY I.

A FAIR INQUIRY AND DEBATE CONCERNING SPACE, WHETHER IT BE SOMETHING OR NOTHING, GOD OR A CREATURE.

SECTION I.

THE SUBJECT EXPLAINED IN GENERAL.

WOULD any one imagine, that so familiar an idea as that which we have of space, should be so abstruse and mysterious, so difficult and unaccountable a thing, as that it should be doubtful and undetermined to this day, among the philosophers even of this knowing age, what space is; whether it be a substance or mode, God or a creature, something or nothing?

The common idea, which all mankind have of it, seems to be much the same, *viz.* "Extension void of matter or body, and capable of receiving or containing matter or body." This space, when it is thus considered as empty, by the learned is usually called *vacuum* or void; when it is considered as filled with body, the learned have supposed it to be space still, and then it is called *plenum* or full. Whether there be a vacuum or void space is now no longer doubted among philosophers, it having been proved by Sir Isaac Newton, and others, beyond all contradiction; and every one agrees to it. Whether it should be called space when it is full, shall be afterwards considered.

Void space is conceived by us as scattered through all the world between bodies, as interspersed through all the pores of bodies, and as reaching also beyond all the worlds that God has made, and extended on all sides without bounds. And as these ideas seem plain and easy, so there is no difference between the philosopher and the ploughman in this their general and common conception or idea of it. But the grand inquiry is, what is this space? Let us search the subject a little.

Space is either something or nothing. If something, it is either a mere idea in the mind, or something existing without. If it exist without us, it is a substance or a mode: If a substance, it is created or increated. Let us examine all these parts distinctly.

SECTION II.

IS SPACE SOMETHING OR NOTHING?

SURELY one would suppose that space cannot be a mere nothing; for it is one of the most fundamental axioms of science, that what has no being, can have no properties or

powers; but space seems to have powers and properties; it is long, broad, and deep: Can there be any mere nothing that has three dimensions? Space seems to have measurable distances contained in it, *viz.* an inch, an ell, a mile, a league, a diameter of the earth, or a thousand such diameters. Is it possible that a mere nothing should reach to such an extent? It appears to have real capacity, or a power to receive and contain bodies; now if this capacity be not a mere nothing, one would conclude space must be something real and existing, which has such a real capacity.

Besides, if two bodies were placed at twenty miles distance from each other, and all the universe besides were annihilated, would not this space be really twenty miles long? and would not this space be called something, which is of such a length? Or if space be not something, then there is nothing between these two bodies; and must they not therefore lie close together, and touch one another, if there be nothing between them? Does not this plainly prove space to be something?

Well, if space be any sort of something, it must either have its being only in our minds as mere idea, or it must have an existence without us.

That it cannot be a mere idea of the mind, is proved by Dr. Clarke, because no ideas of space can possibly be framed greater than finite; yet reason shews that space must be infinite. See his *Letters to Leibnitz.*

To which I might add, space seems to have such an existence as it hath, and to maintain it, whether there were any mind to conceive it or no; and therefore it seems not to be a mere idea.

This leads us to think, therefore, that if space hath any existence, it cannot be merely an existence in the mind, but it must be something without us.

SECTION III.

IS SPACE A SUBSTANCE?

If space be something which has an existence without us, it must be either a substance itself, or a mode or property of some substance; for it is most evident, that it must either subsist by itself, or it must subsist in or by some other thing which does subsist by itself. There can be no medium between subsistence in and by itself, and subsistence in and by another.

Now that space cannot be a mode or property, I prove thus: If it be a mode, where is the substance in which it is, or by which it subsists, or to which it belongs? Doth not the substance exist wheresoever the mode is? Did we ever hear of a mode ten thousand miles long, and no substance in all that length to uphold it?

Or, if the subtance be co-extended with it, as it must be, wherein does this long substance differ from this property and mode? Have not this substance and mode one and the same idea? Are they not the very same individual entity or being? Have they not the same individual extension? and equally self-existing, equally real or unreal? If space be any thing real, and yet a mode, it looks so much like the very substance itself by the properties attributed to it, that I think no man should ever take it for a mere mode, unless he can tell us how it differs from the substance which supports it, and how it depends for existence on that substance.

" O, (say our opponents) space is a mere mode, but the substance that supports it is

utterly unknown, as all substances are." Happy asylum for the learned to retreat to! This shelter of darkness! this invented idea of an unknown and unknowable thing called substance! how well does it skreen and hide a modern disputant from light and argument, when they pursue him so close that he has no other refuge! Yet, even this dark shelter I have endeavoured to break open and demolish in the next Essay. But let us proceed now in the fair inquiry, whether space be a substance or a mode?

Some philosophers, particularly Mr. Leibnitz, have fancied space to be a sort of relative mode, and call it the "Order of co-existent beings or bodies, which order is their general situation or distance: As place is the relation which one particular body has to the situation of others, so space is that order of situation which results from all places taken together." Thus, after a manner which is unintelligible to me, they go on to explain their idea of space. But how can space be a mere order or mode of bodies, when itself seems to have parts extraneous to all bodies, both as it is interspersed among them in the world, and reaches beyond the limits of this world also? Can space be the order of bodies, when space is where the bodies are not? And when space does not depend for its existence on the existence of bodies, can space be a relation of bodies; when it is and ever would be the same idea, if no body ever had been, or if all bodies ceased to be?

Or let us put the argument thus: Space, if it be a mode of being, must either be an absolute or a relative mode; but it cannot be either of these. For all absolute modes want some subject proper for them to inhere in, or to support them in being: All relative modes or relations require some other being, or some subject to which they must relate: But space neither wants any subject to inhere in, or relate to: It wants no other being that we can conceive to make it exist. Try to suppose all beings annihilated, yet you cannot conceive space to be annihilated: It seems to be obstinately existent and self-subsisting: You cannot nullify it, even in thought, though you should nullify all other substances, body, and mind, with all their modes. Surely this can never be a mode of being; for if it has any real subsistence at all, it subsists of itself, which is the first character and property of a substance.

Besides, it seems to have the other character of substance also; for, as it subsists of itself, *i. e.* it wants no created being to support its existence, so itself seems to be the proper subject of many properties, modes, or accidents, such as were just mentioned before, *viz.* length, breadth, capacity, &c. nor do they need any other substratum to uphold them. Now these are the known and agreed characters of substance among the learned, viz. *Substantia est quod per se subsistit*, i. e. *nulla re creata indiget ad subsistendum, et substat accidentibus.*

Even a very learned writer in his discourses on this subject, in his letters to Leibnitz, uses but feeble reasoning to prove that space is not a substance, *viz.* "That infinite space is *immensitas*, not *immensum*; whereas an infinite substance is *immensum* not *immensitas*: therefore space must be a property." Now I might use this very language, to prove that space is a substance, and say, is not space the *immensum* itself, if it has any thing real in it? We have only a mere denial of it, without any argument. Do we not generally say, space is immense, or space has immensity belonging to it? Space is properly the *immensum*, and what forbids it to be a substance? And indeed, if space has any thing of a real and positive existence without us, all the arguments that ever I read to disprove it to be a substance, carry no force at all with them, and seem to be mere assertions, not only without reason, but contrary to it.

SECTION IV.

IS SPACE CREATED, OR INCREATED?

If it be allowed then that space is a substance, it is either created or increated. Surely it cannot be a created substance, because we cannot conceive it possible to be created, since we cannot conceive it as non-existent and creable, which may be conceived concerning every created being. Nor can we conceive it properly as annihilated or annihilable, which we may suppose of every creature. In short, if it be a substance, shall I dare venture to speak it? it appears to be God himself. Mr. Raphson, a great mathematician, has written a book on this theme, *De Spacio Reali*, wherein he labours to prove that this space is God himself, going all along upon this supposition, that space is and must be something real; and then his reason cannot find an idea for it below godhead. And indeed if space be a real thing existent without us, it appears to bid fair for deity; for the supposed perfections and properties of it are such as seem to be infinite and divine. As for instance:

If space has length, breadth, and depth, it is infinite length, breadth, and depth: If it has capacity, it is an unbounded or an infinite capacity. Nor can we possibly conceive of it beyond the universe, but as immense or unmeasurable: It seems to be omnipresent, if it penetrate all things; and it has several other appearing properties of godhead.

We have also an idea of it as eternal, and unchangeable; for we cannot conceive that it began to be, since we cannot conceive it as having ever been non-existent, or any otherwise than now it is: It cannot be created nor annihilated.

It seems to contain what existence it has in the very idea, nature, or essence of it; which is one attribute of God, whereby we prove his existence. It appears therefore in this view, to be a necessary being, and has a sort of self-existence, for we cannot tell how to conceive it not to be. It seems to be an impassible, indivisible, and immutable essence; it looks like an all-pervading, all-containing nature, an all-comprehending being. What are all these but attributes of godhead? And what can this be but God himself?

And how agreeable are these properties of space, say some persons, to the attributes of God in Scripture, taken in the most vulgar and literal sense? It has a being like God in heaven, earth, and hell, diffused through all, as *Psalm* cxxxix. describes the omnipresence of God: And, as the prophet represents God speaking, *Do not I fill heaven and earth, saith the Lord?* Jer. xxiii. 24. *Heaven, and even the heaven of heavens*, saith Solomon, *cannot contain him;* 2 Chron. vi. 18. Nor does the idea of space disagree with St. Paul's account of God; Acts xvii. 28. *He is not far from every one of us, for in him we live and move and have our being.* And accordingly some philosophers, as is before mentioned, have written to prove that space is a real being, and that this space is God.

SECTION V.

SPACE CANNOT BE GOD.

But is not this too gross an idea of the Deity, and unworthy of him? I am afraid of those natural and necessary consequences which seem to arise from the idea of real extension attributed to God, because they seem so very frightful and absurd. We can hardly mention them indeed with a preservation of that reverence of language, and that sacred veneration of soul that are due to the majesty of heaven and earth; and this is a sort of presumptive argument against them, *viz.* That if they are truths, they are such a kind of horrendous truths, that a devout creature shudders to hear them in a literal manner attributed to his Maker. Yet if we will manifest their absurdities, we are forced to pronounce a few of them.

1. If space be God himself, then all bodies are situated in God, as in their proper place; then every single body exists in part of God, and occupies so much of the dimensions of godhead, as it fills of space; then an elephant, or a mountain, a whale, or a wicked giant, have more of the essence or presence and goodness of God with them, than the holiest or best man in the world, unless he be of equal size.

2. If space were God, then the divine Being, though in its whole it be unmeasurable, yet hath millions of parts of itself, really distinct from each other, measurable by feet, inches, yards, and miles, even as the bodies are which are contained in it: And according to this notion, it may be most properly said, that one part of God is longer than another part of him, and that twenty-five inches of the divine nature, long, broad, and deep, will contain above two feet of solid body, &c. which predications seem, at least, very harsh, they grate with pain upon the ear, and are even offensive to the understanding, if they be not absolutely absurd and impossible in the nature of things.

Nor is it to any purpose for an objector to say, that space or infinite extension has properly no parts; for we have as clear an idea, and indeed much clearer, of the several parts of space near us and round about us, than we have, or can have, of the whole positively infinite space, if I may so express it, of which we finite creatures have no proper idea: Our idea of infinite space, such as it is, is made of finite spaces, or parts of space in a perpetual addition.

Nor can it be denied that space has parts, on a pretence that these parts are not actually separable; for even in a body we conceive clearly of the several distinct parts of it, without considering whether they be separable or no. Suppose body to be infinite, and suppose it to be perfectly solid, and as uniform as space is, yet it is very evident that we can conceive distinct parts in it, without conceiving them separated or separable. The ideas of separation or separability are not necessary to the idea of the parts of space, which are conceived as several lesser spaces or extensions co-existent in time, but really distinct from each other, whether adjacent or distant.

3. Another hard consequence of supposing space to be God, is this: Then every part of this divine space will contain divine perfections in it complete, or only some part of each of them; if only some part of each of them, then each part of the space,

whether an inch or a mile square, has a degree or share of wisdom and power, holiness and goodness, in proportion to its dimensions; which position is too absurd to be allowed. We must be forced to allow then, that every part of space contains all these divine attributes or perfections in it completely; and if it be so, then not only every mile, but every yard or ell, and every inch of space, is all-wise, and all-holy, almighty and gracious; for every inch of space is a part of the substance or essence of God, if space be God himself. Besides, if every inch of space contain completely these divine perfections, then there seem to be so many complete wisdoms and powers, *i. e.* in reality, so many all-wise and almighty beings, as there are inches or minutest parts of space; for every part of space seems to be as much independent on any other part, as one part of matter is independent on another part: And if so, then every part of space is an independent, all-wise, and almighty being; and instead of one God we shall have millions.

To conclude; if space be a substance, it must be the one divine substance of infinitely long and broad perfections; or else all the parts of it must be lesser divine substances united in one. What manifold and strange absurdities, or at least seeming absurdities, and frightful propositions, will arise from this notion of the divine Being?

Objection. Perhaps it will be said, that this space is not God himself, but only his immensity; now his immensity is not properly said to be all-wise and holy and mighty, though God himself be so.

Answer. We have already proved that space cannot be a mode or property; but that, if it be any thing, it must be a substance. Therefore, if it be any thing divine, it is not merely the divine immensity, or an attribute of God; but it is his essence or substance: It is the real *immensum*, it is God himself.

This appears further evident, if we consider, that we must necessarily suppose the all-wise and almighty substance, or essence of God, to be co-extended with his immensity: Otherwise you make infinite extension, which you call a property or a mode, to exist beyond and without the subject of it; which is absurd enough. And therefore Sir Isaac Newton in his famous *Scholium*, at the end of his *Mathematical Principles*, where he supposes God to be extended, is constrained to allow, that God is present every where by his substance; for, saith he, power without substance cannot subsist; and I am sure then it is sufficiently evident that immensity or space extended beyond the substance, can have no subsistence.

Besides, is not this immensity or space the very thing you conceive of as the subject of the modes of eternity, capacity, comprehension, self-existence, unchangeableness, &c. *i. e.* as the substance itself? Is it not this space which you conceive of as a self-subsisting and unannihilable being? And what is that but a most substantial idea?

Though some of our modern philosophers renounce all knowledge of substances, while they maintain the necessity of them as a substratum for modes; yet it seems to me that this is one chief reason which has tempted many of them to suppose both God and all other spirits to be extended, that they may have a sort of substratum or subject for the powers of thinking and willing, or the modes of knowledge and volition to subsist in.

Thus it appears, so far as I can see, that if space be any thing in or of God, it is the very substance of God. However, even upon the supposition of this last objector, we

may at least infer thus much, that if space be but the immensity of God, then God is wheresoever space is, and his essence consists, partly at least, in this immense space; and most of the inferences which I drew from the supposition of space being God, are just and natural, if space be God's immensity, however harsh and absurd they may be. Let me just mention another argument to prove that space is not God.

4. It hath been proved by some philosophers, Des Cartes, Dr. Cudworth, Mr. Norris, and others, and that with a good degree of evidence, that a spirit is not extended; and then God, who is the most perfect spirit, includes no idea of extension in the notion of him. The most essential, obvious, and prime ideas of God, are of a spiritual kind, *viz.* consciousness, thought, wisdom, knowledge, will, active power, goodness, the first cause of all, &c. Now none of these imply extension, nor have any need of parts extraneous to each other. Yet if this extended space be the divine substance, it is very amazing, that the properties of deity should have no apparent need of such a substance, and that this substance should have no conceivable connection with its most essential and necessary properties and powers. Who can point out to us any influence that extension or space can have towards thinking? towards wisdom or power? towards holiness, goodness, or faithfulness? There is no conceivable connection in the ideas. They are not only distinct, but separable. Banish perfect wisdom and power from your thoughts, and, if possible, annihilate them in thought; yet space or extension remains: Banish extension from your thoughts, yet perfect wisdom and power remain. We cannot conceive of wisdom, goodness, and power, as inherent in space; nor can we conceive of space as being wise, holy, powerful, and good. There doth not seem to be any possible connection in our ideas of these different extremes, nor any real union or connection in the nature of things, since we can banish either of them in our thoughts, and yet the other remains in the full idea of it. Can one then be a property of the other?

Let us inquire again, If God be infinite space, what can this space do toward his creation or government of the universe? Does proximity enable him to know or to move the corporeal world? He cannot touch nor be touched. He is supposed to penetrate all bodies, but this very penetration does nothing toward his consciousness, or his movement of them. His knowledge and motive power do not act toward bodies by penetration of them, and there are two plain reasons for it. (1.) Because God knew the world as well before he made it, and before he is supposed to penetrate it, as he does now; and he caused it at first to arise into being in all its motions, without a prior penetration of it. (2.) Because created spirits neither acquire their knowledge or their motivity of bodies by this supposed penetration, as I have shewn in Essay VI. The power of God to know and move bodies arises, therefore, from some such superior and unknown property of his nature as belongs to deity alone, who can create them.

Again: Does every act of God, every thought, and every volition about an atom or a fly, employ the whole immense extension of space? Doth a thought of the purest, the most spiritual and abstracted objects, imply or require any use of length and breadth in it? Does the whole infinite extension work in every thought? Or, indeed, what has immense length and breadth to do at all toward thinking or willing? Let us first find what the supposed finite length and breadth of a common spirit can do towards its ideas

and volitions, and then I shall be more easily persuaded that infinite length and breadth have a proportionable influence upon infinite or divine thinking.*

To sum up the whole matter; we have endeavoured, by reasoning, to trace out what is space, and we seem to have found it cannot be a mere nothing, because it appears to have real properties; it cannot be a mode of being, because it seems to carry in it an idea that subsists of itself, though we should nullify all other beings in our thoughts; and therefore it must be a substance: And yet if it be a substance, it cannot be a created substance; because we cannot conceive it creable or annihilable; and therefore it carries with it an idea of necessary existence; and besides this idea of necessary existence, it seems to have several other properties of godhead, *viz.* immensity or omnipresence, eternity, &c.

And yet so great is the absurdity of making the blessed God a being of infinite length breadth, and depth, and of ascribing to him parts of this nature, measurable by inches, yards, and miles, and commensurate to all particular bodies in the universe, with other unhappy consequences, that I cannot suffer myself to assent to this notion, that space is God: And yet the strongest arguments seem to evince this, that it must be God, or it must be nothing.

SECTION VI.

A REVIEW AND RECOLLECTION OF THE ARGUMENT.

But whither has this track of reasoning led me? What is this most common and most strange thing, which we call space, at last? This wonder of nature, or this imaginary being? This real mystery, which is so universally known, and so utterly unknowable? Is it neither nothing nor something? Is it neither mode nor substance? Is it neither a creature nor God? That is impossible: Surely it must be ranked under one of these names: All these can never be renounced and denied concerning space: That would be most absurd indeed. What have we learned then by all this train and labour of argument, but the weakness of our reasoning? We seem to be urged on every side with huge improbabilities, or glaring inconsistencies: We are lost and confounded in the most familiar and common things we can speak of: There is scarce any idea more universal and familiar than that of empty space; all mankind seem to agree in their idea of it: And yet after all our philosophy and toil of reasoning, shall it be said that we know not whether it be a mere nothing, or whether it be the true and eternal God? Fruitless toil indeed, and astonishing ignorance! Puzzling difficulties attend the argument on every side, and a shameful perplexity and darkness hang heavy upon the boasted reason of man, while he is labouring with all the powers of his soul to resolve

* It would be endless to run over the arguments which have been brought by many writers, against the power of extension, as well as against the power of matter to think. I would only mention here what seems to be the result of Dr. Clarke's long contest with Mr. Collins, to prove that matter cannot think, and apply it more effectually to extension. If extension has the property of thinking, every part of extension must either have that property in itself, or must do something towards it in the whole: As for instance, if body has motion, every part of that body has motion in itself; or if a surface be round, every part of that surface doth contribute something toward that roundness: But every part of extension or space doth not think; this would make innumerable spirits; nor doth every part do any thing toward it; for thought is simple, and not made up of parts; and therefore a spirit must be quite another thing, even a being which has no parts, no extension.

this entangled theme. We enter into the abyss of space, infinite and eternal space, and our thoughts are lost and drowned in it.

Let us lie still here and muse a little, and give a loose to our wonder and our shame. Are the eternal God and a mere empty nothing so near akin to one another, that we cannot see the difference between them? That we are not able to tell whether space be God, or whether space be nothing?

This we know and are sure of, upon the most substantial and uncontrollable proofs and evidences, that there is a first cause and mover of all things; there is a self-existent being, which needs no cause; and there is an eternal and all-wise mind: There is a conscious and almighty power, which made all things; there is a God. He is the supreme substance, the most necessary and substantial of all beings, as being at the greatest distance from nihility or nothing. Our belief of this doctrine is too well founded, and too strongly supported to be ever weakened by any airy debates about empty space. And yet has this empty thing, or rather this empty nothing, surnamed space, such sort of properties and powers as to resemble godhead? Are the widest extremes so near together? Is a mere non-entity so like the infinite being, the most perfect substance, in any properties, that we cannot distinguish the one from the other? Can the absence of all things, or an empty nothing, ever look like so substantial a being, as to be mistaken for God? Or can the great God, in any views or aspects, ever appear to be so thin, so subtle, so empty, and unsubstantial a thing, as to look like nothing? What surprising shame should seize upon our understandings, our vain and conceited understandings, at such a thought as this, that even philosophers cannot agree, and inform us certainly, whether space be God or nothing! Though we are ascertained by many demonstrations, that the great God has a most substantial and eternal existence, yet we seem at a loss to determine whether this empty thing called space be not this God.

Let our reason blush and hide its head, and lie abased for ever at the foot of the divine Majesty. This strange theatre of argument, this endless war of words and ideas, throws a world of confusion and abasement upon the proudest powers of mankind. It seems to spread a scene of triumph for God over the vain creature, man, and all his boasted acquisitions of knowledge, that he hardly knows the highest and the best of beings from an imaginary shadow of being, an empty nothing; that though in some views he is absolutely certain that God is the supreme substance, and has the highest and strongest title to existence and being; yet in other views and inquiries he cannot strongly and boldly distinguish the Creator of all things from a mere non-entity, which in some sense is infinitely below the character or idea of the meanest dust or atom of the creation. Blessed God! forgive all the vanity and conceit of our reasoning powers, all our foolish and unworthy apprehensions concerning thy Majesty; scatter these shadows of thick darkness, lead us out of this labyrinth of gross ignorance and mistake, and help us to make our way through this abyss of night, through this endless circle of perplexity. Shew us thyself, O God our maker, and teach us what thou art, that we may adore thee better; nor suffer us to wander in this thick mist, wherein we can scarce distinguish thee from that which has no being.

SECTION VII.

THE ORIGINAL OF OUR IDEA OF SPACE, AND OUR DANGER OF A MISTAKE.

Come then, my soul, let us make one effort more, and try to recover ourselves. May we not suppose, that in this imperfect state wherein the soul is united to a body, it is too ready to be imposed upon thereby many ways? Under the influence of this union to matter, it is easily persuaded to attribute corporeal ideas, such as length and breadth, to a spirit, and even to God the infinite Spirit, because the soul is continually conversant with them; it is best acquainted with these bodily ideas, and is tempted to imagine that no real being can exist without them.

Sometimes the soul dwelling in animal nature, and under the power of imagination, mistakes a substantial being for mere nothing, and sometimes it mistakes nothing for a substantial being. And indeed this is the very first way whereby all men gain the idea of space, the subject of our present debate. We see a room which is full of light and air, which are real bodies or substances, and we imagine there is nothing in it; and then we call this nothing void or empty space, and fancy this empty space to be broad, and long, and deep, to reach from wall to wall, from the floor to the ceiling: Thence comes our first conception of space, with its properties of length, breadth, and depth; and thus it is ushered into our minds at first by a gross mistake of light and air, which are something, for meer nothing. Then our imagination changes the scene, and turns this nothing into something again, by leaving out the idea of void or emptiness, giving it a positive name, and calling it space.

Alas! how prone are we to error, in taking things that are not for things that are, and of mistaking mere imaginary beings for real ones, by supposing real properties to belong to them. Perhaps this may be the very case, when we imagine space, which in itself may be a mere non-entity or nothing, to have any real powers or properties; and our thoughts may be grossly deluded in this matter, though it may not be easy to find always where the delusion lies.

SECTION VIII.

SPACE COMPARED TO SHADOW OR DARKNESS.

I am sure there is a very great instance or example of the like kind of delusion in our ideas of shadow or darkness.* May we not as well say, that a shadow or darkness has some real powers and properties? May we not say, that it hath the property of length, and breadth, and depth, and distance, contained in it? That it has power to conceal men and houses from our sight, to spread darkness and invisibility over a

* The chief, if not the only difference between our ideas of shadow and darkness, is this, that darkness is a general term, signifying the absence of light; but the word shadow usually signifies that absence of light from any place, which is caused by the interposition of an opacous body between some lucid body and that place. Such are the shadows of men, beasts, and trees, upon a field, in a shining day. Night itself, in proper speech, is the shadow of the earth interposed between the sun and the opposite part of the air or sky: And all darkness, as far as our senses reach, is really but a shadow.

garden of flowers, or a room of pictures, and yet it hath a power to render stars and glow-worms more visible. Does not a shadow shew us the hour on a sun-dial? Does it not refresh man and beast in a sultry day, and help to spread slumber over the eyes at night? Are not these considerable and real powers.

Again, a shadow seems to have a motion. If a cloud move across the sky and hide the sun, do we not say, "The shadow moves either slowly or swiftly across the field or the chamber?"

Hath it not also ten thousand shapes or figures? Let me hold up my hand or any other object between the sun and the wall, hath not the shadow what shape I please to give it, and what motion I please to excite in the thing which is represented by the shadow? Now it is plain, that all these seem to be real properties, and the powers of a real being.

And as it has these seeming properties and powers, which make mankind ready to fancy it a real being, so some of the properties of it seem to be infinite also. Is not darkness extended beyond the utmost bounds of the material creation? Is there not some real limit to the flight of the utmost wandering star-beam? If not, then the material world is infinite; for star-beams and light are matter: If there be a limit to light, then all beyond this limit and these wandering beams is pure darkness, and this darkness is unlimited and infinite. May not a thousand new lights, new stars, or planetary worlds, be created in this immense darkness? Has it not capacity to contain them all, and yet again to stretch itself infinitely beyond the bounds of this new creation? We can no more assign the limits of it, than we can the limits of space*. Again, as darkness hath a seeming immensity belonging to it, has it not an eternity also? Was not darkness eternal before light was ever formed or the first beam of it created?

And yet after all these sportings of the imagination, which seem to assign real properties and powers to shadows and darkness, and even to stretch them to an infinite extent, we know and are sure that darkness, or a shadow, is a mere nothing: It is only a privation or absence of light: In proper speech it has no being. And philosophers are able to give an exact and rational account how all these appearances are made by the presence or absence of light, without allowing a shadow to be a real being, or to have in reality any powers or properties at all. And perhaps in this present state we are deluded with the seeming properties of space, as much as we are with the seeming properties of shadow: And though I grant the parallel be not perfectly exact in all respects, yet in several respects they are so much akin, that in reality space may be nothing but the absence of body, as shade is the absence of light: And both may be capable of explication by philosophy, without supposing the one or the other of them to be real beings.

* I am sensible it will be objected here, that it is space, not darkness, that has the capacity of receiving or admitting light or sun-beams. But it may be replied, that though it is space that admits new body to exist there, yet it is darkness that does as it were join with space, to admit the first beams of light there: Darkness gives it a capacity of admitting that particular body called light, as much as space gives it a capacity of admitting body.

SECTION IX.

SPACE INACTIVE AND IMPASSIVE.

Let us try now whether we may not take courage from this hint, and raise some efforts of reasoning, in order to prove space to be nothing real, or no real being: Surely there is no real being whatsoever, but has some capacity either of action, or passion, of putting forth some sort of act, or of being acted upon: But space is utterly incapable of all real active or passive power: It can neither be an agent, nor a recipient of action. It cannot act upon body, either as body does, *i. e.* by touching; nor as spirit does, *i. e.* by volition; for it cannot touch nor will. Nor can space receive any actions or impressions of any kind from body or from spirit: Now, since no manner of agency can belong to it, nor any operation of any being be received by it, surely such an inactive thing cannot be God, nor can such an impassive thing be a creature: Therefore it must be a mere non-entity or nothing.

1. Such an impassive thing cannot be a creature. There is no created being but is capable of being acted upon by another being, at least by God himself, and thereby receiving some change: But space cannot be acted upon; no, not by the great God the maker of all; nor can it receive any real and proper alteration in itself, nor suffer any manner of change, but what a mere nothing may receive; *i. e.* being may be put where nothing was before: So body may be put where before there was empty space. Thus space in itself is really an impassive thing, and therefore it is no created being.

2. Such an inactive being cannot be God; for the living and true God cannot be conceived otherwise than as a most active being, a being of necessary and everlasting activity: This belongs to the very idea and essence of godhead. But space, empty space, *i. e.* extension without solidity, is the most inactive idea you can frame, and indeed utterly incapable of all action, either as an instrument, or as a prime agent.

You cannot add the least degree of solidity to the idea of space, in order to render it capable of acting as a body does; for that would turn it into the idea of body or matter, it would be space no longer.

You cannot make space think, or will, or act, as a spirit does; for join thinking and space, which are two distinct ideas, as near as possible in your mind, yet you cannot unite them into one being, nor conceive of space as having any share in thinking, or as exerting a thought. So you may join iron and joy together in your mind as two neighbouring ideas, but they will be two ideas for ever distinct: No force can squeeze, melt, or weld them together, and make them unite in one; you can never make iron become joyful: There is an utter inconsistency in their ideas, and they are eternally incompatible. Space can no more exert a thought, than iron can exert joy.

Thus space can never act as a body or as a mind. Space and action are two incompatible ideas. Mere extension is not only inactive in itself, but cannot possibly have activity given to it by any means; for it contains an idea of everlasting inactivity, and an impossibility of action: Wheresoever there is action there is something besides space, even some other being: Space therefore can never be the idea of the nature or substance of God, whose nature is necessarily and for ever active, and whose existence ceases when his activity ceases.

SECTION X.

A RE-EXAMINATION WHETHER SPACE HAS ANY REAL PROPERTIES.

LET us examine yet further the supposed properties and powers of space, and consider whether they be real or no.

The first supposed property of space is extension, or length, breadth, and depth; but let us remember what is our original idea of space, and how we came by it. Have we not found that our first idea of it is emptiness, or absence of body or matter in a room or vessel, whose sides are distant? Then we call this absence of matter, or this emptiness, long, broad, and deep, *i. e.* there is no matter or body there. And when we say, that some part of space is a yard or a mile long, we mean only that body is absent for a yard or a mile, or there is emptiness for a yard or a mile together, or that emptiness reaches a mile or ten thousand miles beyond the universe; that is, there is no matter or body there. This is the common idea of mankind. And thus we come to ascribe the properties of being to a mere nothing; and let this be well observed, that if we were never so sure that there were no being at all there, as we are sure there is no body, yet we should have the very same idea of space as we have now, *i. e.* a long, broad, and deep emptiness, or absence of being; and that body which is long, broad, and deep, might be placed there. But this leads our thoughts to the next particular.

The second supposed property of space is a capacity to receive bodies into it. But if this matter be searched to the bottom, perhaps it will be found that space is no otherwise capable of receiving body into it, than as the emptiness of a vessel makes it capable of receiving liquor, as darkness is capable of receiving light, or than as sound may be admitted where before was silence; that is, that something may be introduced or received where there was nothing before. And it is much in the same manner that privation is exalted to be one of the three famous principles of being among the Aristotelian philosophers, *viz.* matter, form, and privation. Ridiculous principle indeed! which signifies no more than that where any new form or quality is introduced into matter, there must be an absence of that very quality or form before it is introduced: So when body is admitted or introduced into space, it is necessary there must be no body there before; and where the first light is introduced, there must be antecedent darkness.

I grant the modes of speaking concerning the capacity of space to receive body are more familiar to our ears than the capacity of darkness to receive light; but, perhaps, in truth both those expressions signify no more than that body or light may be brought in where there was space or darkness before.

In the third place, we have been ready to say, that space penetrates all body, and is itself penetrable by body; that is, that bodies can exist where space is and fill up the self-same room; as though body and space were two extended and co-existent beings. But, perhaps, it is a very improper thing to say space penetrates body or matter, for we might as well say light penetrates shadow; whereas in truth, where light comes shadow ceases and is no more, for light excludes it. May it not be as natural and just therefore to suppose that space can never penetrate matter, but that wheresoever matter is, there space is not? Doth not space vanish or cease utterly when and where body comes?

I am sure empty space ceases, and does not penetrate matter, and I know of no space but empty space.

And here by the way I might observe, that for this very reason space cannot be God: For space is really nullified where body comes. But no part of God can be nullified. To talk of mutual penetration of matter and space, is a mere term of art invented to maintain the existence of space, where sense and reason join to declare there is none. For in truth, where body exists space is not, and it only then appears to be what it really was before, that is, an empty nothing. Space is no more, and is entirely lost, when body is placed in the room of emptiness. Thus space and emptiness are all one, and perhaps are as mere a nothing as shadow or darkness.

A fourth attribute or property allowed to space, is immensity or infinity: But though space seem to be infinite or immense, yet it is not really and positively so; for wheresoever body is, there space is not; and therefore space is not every where, and then it cannot be absolutely infinite. Wheresoever this material world is, space is excluded, and is as it were nullified, and is not: Now it would be a marvellous idea indeed, to suppose space all round beyond this world to be a real, positive, immense, or infinite being, and yet to have such vast nullities of space in the very centre and bosom of it, where this world lies: This would destroy the complete infinity of it, and seclude it far from the idea of a God, as being utterly unworthy of him.

And yet further, if this world, or any part of it were annihilated, then space or emptiness would be larger than it was before: That is, emptiness would be increased: But this is too mean and too changeable an idea to make any pretences to godhead.

Again, a fifth supposed attribute of space is indivisibility: It seems to be indivisible indeed, but it is not so, if it does not penetrate matter; for put a body into the middle of an empty space, and it really divides it; *i. e.* the middle part ceases to be empty space, because it is filled with body, and space remains on both sides; even as a streak of light or sunshine coming from the south destroys darkness or shade so far as it comes, and thus divides the two parts of remaining darkness, the east from the west.

A sixth attribute or property ascribed to space, is self-existence, or that it wants no cause. But perhaps the true reason why it appears to want no cause, is not that it has such a real and substantial essence as is too big to be produced by any cause, but that it is such a subtle, tenuous, unessential, or imaginary thing, that has not essence, nor existence, nor reality enough to want a cause, or to be produced or caused: Now this is vastly different from the idea of God's self-existence, or his self-sufficiency to exist without a cause. Universal darkness wanted no cause before the creation of light.

There is yet another supposed property of space, and that is, necessary existence, and that it cannot be annihilated, nor can it begin to exist. But here also light and shade are happy illustrations of this debate about body and space. Darkness and space are not necessarily existent; for where light comes shadow is annihilated and gone; where body comes, space is banished and annihilated. When that body is removed, space begins to exist there again, as much as shadow does when light departs: But in truth it should rather be said in both cases, where something was before, now there is nothing; and when something returns, the non-entity or nothingness ceases. Body and space mutually exclude one another, as light and shade, something and nothing. And

we are too ready to apply the words existence and annihilation to shade and space, which are non-entities, as well as to light and body, which are real beings.

Positive terms tend to give us positive and delusive ideas of non-entity. If in our survey of all these supposed properties of space, we use the word emptiness or void, instead of the positive term space, we should perhaps arrive at juster ideas of all this matter. Let us take the pains then briefly to run over them again in this manner.

Is emptiness long, broad, and deep? Is emptiness extended? Has emptiness a capacity to receive body? Is emptiness penetrable by matter? What do we mean by all this? Does it signify any thing more than that matter or body is absent thence, and it may be brought in there where emptiness was before? This does not render emptiness a substance, or real being, or make it the support or substratum of real properties.

Is emptiness immense or infinite beyond the limits of the universe? What do we intend by it, but that beyond this world of bodies there is no matter or body existing, yet matter or body may be introduced where there is an emptiness or absence of it.

Is emptiness indivisible? By no means; for a wall or curtain hung up in an empty room divides it into two lesser voids or emptinesses, *i. e.* there is an emptiness or absence of body on both sides of the partition.

Is emptiness self-existent? Not at all; for it hath no real existence; it is rather a negation of being. Is it necessarily existent? No surely; for it loses what existence it is supposed to have when body or matter is introduced, as shade or darkness loses what existence it appeared to have when light breaks in.

Yet a little further may this parallel be illustrated, in order to shew how much analogy there is between space and shade. Take a hollow sphere of lead, out of which all air is supposed to be excluded; place it on a bright day in the midst of sun-beams; here is a globe of space, and a globe of shade or darkness commensurate, and, if you please, co-extended with each other, and both included in this sphere; move it swiftly, the shade and the space move with the same swiftness: Stop the sphere, and the space and shade are at rest; bruise it inwardly, and you alter the figure both of the shade and the space included; for you annihilate a segment both of space and shade: Break a hole into this globe, and immediately you admit both light and air, which are bodies, to fill up the room of space and shade; and thus both the shade and the space are annihilated or nullified together. Here are then, or here appear to be, two co-extended and commensurate globes of figured and moveable I know not whats, absolutely destroyed and nullified in a moment: But perhaps the whole mystery of it is no more than this, that the non-entity of each of them ceases by the introduction of real being or matter.

SECTION XI.

AN OBJECTION AGAINST THE NIHILITY OF SPACE ANSWERED.

After all, some person may say, But how will you answer that great objection, *viz.* Space cannot be mere nothing, for two bodies may have twenty miles of space between them, and yet if all this space be nothing, then there is nothing between these two

bodies, and therefore they are close together, or touch one another, and yet are twenty miles distant, which is impossible?

But may not this be answered by a round denial of this proposition, If there be nothing between them, then they touch or are close together? Why may not two bodies be created or placed at twenty miles distance, and yet nothing but emptiness, *i. e.* no real being, between them? However harsh and uncouth it may sound to learned ears, that these two bodies are twenty miles asunder, and they do not touch though there be nothing between them, yet the vulgar world, who very much determine the common sense of words, will allow this language to be good; for they generally suppose space to be emptiness, that is, to be nothing. And if the learned are offended with this language, it is because they have, of late years at least, run into this supposition, that space is a real something; and it is merely their own espoused opinion that makes this expression offensive to them, which the vulgar part of mankind generally approve of, if you give them leave to think a little.

Besides, by the former debates it plainly appears, that if space be a real something, it must be a substance, it must be deity; for the reasons seem to be unanswerably strong, that space cannot be a mode, nor a creature. Now is it not quite as absurd to say, There are twenty miles of deity between two such distant bodies, as to say, they are created or placed at such a distance, and yet there is nothing between them, *i. e.* there is no real being, or between them is all emptiness?

I grant it hardly possible to speak on this subject of non-entities or nothings, without using the terms that represent positive beings and real properties: But as we are thus imposed upon by words and by our common ideas in treating of shadows, which we know are nothing but the absence of light, *i. e.* a mere non-entity, why may not the same be true also with regard to space or emptiness, which is the mere absence of body? And if we are in this point imposed upon to take space or emptiness for a real something, by some forms of speech we have been taught to use concerning it, and some appearing or imaginary properties that we ascribe to it, we see plainly it is not the first nor the only instance wherein mankind have been deluded by the common ways and manners of speaking, and imposed upon to take words for things, and to mistake appearances for realities.

In order to confirm this thought, I may cite Mr. Locke himself, however positive an idea he may suppose space to be in some parts of his writings. His eighth chapter of the second book of his *Essays* allows positive ideas of mere private things or privations. See Sect. 3, 4, 5. "The idea of black is no less positive in the mind of a painter than that of white, however the cause of that colour in the external object may be only privation."

Section 4. "If it were the design of my present undertaking to inquire into the natural causes and manner of perception, I should offer this as a reason why a privative cause might, in some cases at least, produce a positive idea, *viz.* that all sensation being produced in us only by different degrees and modes of motion in our animal spirits, variously agitated by external objects, the abatement of any former motion must as necessarily produce a new sensation as the variation and increase of it, and so introduce a new idea, which depends only on a different motion of the animal spirits in that organ."

Section 5. "But whether this be so or no, I will not here determine; but I appeal to every one's own experience, whether the shadow of a man, though it consists in

nothing but the absence of light, (and the more the absence of light is, the more discernible is the shadow) does not, when a man looks on it, cause as clear and positive an idea in his mind as a man himself, though covered over with clear sun-shine? And the picture of a shadow is a positive thing. Indeed we have negative names which stand not directly for positive ideas, but for their absence, such as *insipid*, *silence*, *nihil*, &c. which words denote, or refer to, positive ideas, *i. e.* taste, sound, being, with a signification of their absence."

Section 6. "And thus one may truly be said to see darkness. For suppose a hole perfectly dark, from whence no light is reflected, it is certain one may see the figure of it, or it may be painted."

Thus far Mr. Locke: And I ask leave to add to this discourse, that I have found a late ingenious writer, in his notes on the English translation of Bishop King's Treatise *De Origine Mali*, published in 1731, well support such sort of sentiments as I have here advanced concerning space, *viz.* that it is rather a negation of being than any thing real and positive, however our common ideas and language may lead us into mistakes about it. See Chap. I. Sect. I. Note 5, 11, and 13. Whether the learned author of the *Defence of Dr. Clarke's Demonstration of the Being of God*, has effectually answered all this, the reader must judge.

SECTION XII.

SPACE NOTHING REAL, BUT A MERE ABSTRACT IDEA.

After all these debates, wherein we have been endeavouring to prove space to be nothing real without us, yet perhaps we may allow it to be an abstracted idea of the mind; and it may possibly be formed by abstracting the length, breadth, and depth of matter, *i. e.* the extension from the solidity of it: For since we frame an idea of length without breadth, and call it a line, when we know there is no such thing really existent; and we form ideas of united length and breadth without depth, and call this a surface, though we know also this cannot exist; so why may we not frame an idea of extension or space, *i. e.* length, breadth, and depth without solidity;* and yet allow that it hath no proper existence but in our ideas?

The arguments used in the beginning of this Essay to disprove space to be a mere idea, may be repeated and answered thus:

It is said, We cannot have an idea of what is truly infinite; but our reason assures us space is infinite, or without bounds, and therefore it is not a mere idea. I answer, Though we do not form an idea of space actually and positively infinite, yet we can form an idea of infinite space of the ever-growing kind, and it may be a mere idea still. Our idea, indeed, is not actually infinite, we cannot grasp the infinity of space beyond the world, for that would be to bound or limit emptiness: And so we may have an ever-growing idea of infinite number as well as infinite space or emptiness, yet it is a mere idea, and hath no real existence without us.

* Solid is here taken in the physical sense for what resists matter, and not in the geometrical sense for the three dimensions united.

Again, it is said, space cannot be a mere idea, because it seems to have a necessary and obstinate existence, whether there were any mind or no to form an idea of it. I answer, Such are the eternal truths, *viz.* three and three make six, the whole is bigger than a part, &c. and yet what are these besides ideas? Have they any real existence extraneous to the minds that conceive them? And yet perhaps space has hardly so much existence as these.

And it is certain, if space or emptiness be nothing but the mere absence of being, then the idea of it is only a conception of nothing after the manner of something, and that must be a mere idea.

To conclude, After the laborious searches of thought, reasoning, and reading, in several stages of my life past, these are the best conceptions and sentiments that I can frame of space. I grant there may be some difficulties yet remaining, and some darknesses which yet may hang over this subject. Learned men have laboured hard to scatter them in former ages, and in the present too, without full success; yet perhaps in future time there may be a way found out for adjusting all these difficulties to the more complete satisfaction of some following age. But in every age of this mortal and imperfect state there will be some unknowables and insolvables: Many of the themes and inquiries relating to *infinities* and *incommensurables*, both in magnitude and number, and *eternals in duration* and *abstracted truths*, are of this kind: And if we should agree to throw in *space*, and *atoms* or *indivisibles* into this heap, we should but enlarge the number of those perplexing arguments, whereby, perhaps, the great God our maker designs to maintain a perpetual check upon our proudest powers of reasoning, to plunge us now and then into darkness and endless confusion, to humble us under a sense of the narrow limits of human knowledge, and teach us to pay all due veneration to his understanding, which is unsearchable.

APPENDIX.

About the time the second edition was published I had four treatises put into my hands, wherein the notion of space is at large debated, which is the subject of this First Essay. When an important dispute is managed by persons of such ingenuity, and such acute reasoning powers as Mr. Jackson, Mr. Edmund Law, Mr. John and Mr. Joseph Clarke, I hope the result of their thoughts will be the investigation of truth, and the establishment of it in the world; lest while some suppose space to be true godhead, and others make it a mere idea and nothing real, the atheists upbraid us that we scarce know the difference between God and nothing. I owe my thanks to two of those gentlemen who think any light hath been thrown on this controversy by the speculations of my younger years: But my time now demands other employment, and I cheerfully leave this subject in such hands. Yet I ask leave to take notice that Mr. Joseph Clarke's distinction of a real and an ideal nothing will help to solve many difficulties in this debate, which are created merely by the perplexity of language: And I cannot but approve of Mr. Law's remark, that a subject which in the minds of so many men either raises or occasions so many different and contradictory ideas or notions, bids fair to be a mere idea, and to have no real existence. 1734.

ESSAY II.

OF SUBSTANCE: AND OF SOLID EXTENSION AND A THINKING POWER, AS THE TWO ONLY ORIGINAL SUBSTANCES.

SECTION I.

MR. LOCKE'S NOTION OF SUBSTANCE CONSIDERED.

SUBSTANCE is another of those mysteries wherein we bewilder and lose ourselves by attempting to make something out of nothing. Mr. Locke has happily refuted that unreasonable notion of substance in general, which makes it to be some real thing in nature, different from all the united qualities, the supposed properties and powers of body or spirit, and he has exposed it to just ridicule, as in Book II. Chap. XIII. Sect. 18, 19, 20. In Chap. XXIII. Sect. 2, 3, and 6, and in other places, he tells us, " Whatever be the secret and abstract nature of substance in general, all the ideas we have of particular distinct sort of substances are nothing but several combinations of simple ideas co-existent in such (though unknown) cause of their union, as makes the whole subsist of itself:" And he often speaks of this same unknown cause of the union of properties, both in corporeal and spiritual substances, as in Sect. 15, 37. Now I acknowledge I have very little to say against Mr. Locke's representation of the notion which he has of particular substances, if this unknown something, which he supposes to be the cause of the union of their properties, were not so much insisted on, as to lead his readers into a belief that there is such a sort of unknown real being, called substance in general, which supports all the properties that we observe in particular different beings, and which he before had refuted and ridiculed with so much justice and elegance.

I confess, I see no sufficient reason why we may not content ourselves with the notion and description of substance in the main which the schools give us, viz. *Substantia est ens per se subsistens & substans accidentibus;* in English thus, 1. It is that which supports accidents or qualities in being, which could have no being or existence at all without such a support, or such a subject in which to exist. 2. It is that which can exist, or which subsists by itself, without dependence on any created being. All this is not at all disagreeable to Mr. Locke's sentiment: For when we observe any being, whose several modes we perceive inhering and united in it as in one common subject, or bond of their union, this we call a *substance:* And this name of substance we also attribute to this being from a further consideration that it subsists of itself, *i. e.* independent upon any other created being.

But though Mr. Locke would seem to exclude and abandon any general notion of substance, as another real physical distinct being, provided to support all its real or

supposed accidents or qualities, and seems to banter it by the Indians' unknown something, which supports the tortoise, which supports the elephant, which supports the world; yet, as I intimated, he too often represents this notion of substance as some real unknown thing or being, which holds the properties in union, and which is different from all those things which he calls qualities or properties, and which supports them all in existence; though, he owns, we know it not, and have no idea of it: And thus he seems to build again and maintain the very notion which he before destroyed.

Truly if there were any such real being in nature as substance in general, or a common substance which supports all the properties of things, and this being were utterly unknown to us, then I think it might be granted, that all beings are, or at least might be, the same in substance, and are, or may be, diversified only by their properties or accidents: For if we know nothing of this being, called substance, we can deny nothing of it: And then perhaps it might be said, that God and the creature, that body and mind, are the same in substance, even the same individual substance, and that they differ only in certain properties: But this is a most palpable falsehood, which I shall take some further notice of by and by: For God and the creature differ from each other in their very essence, in their substantial nature or physical being, though the logical or generic idea of substance may be applied to them both, as self-subsisting beings. So matter and mind, or body and spirit, have a real, essential, and unchangeable difference in the very substance of them, *i. e.* in what they are in nature, though the name substance be attributed to both, and that even in the same sense, because they both agree so far that they both subsist by themselves.

SECTION II.

THE PLAIN IDEA OR NOTION OF SUBSTANCE APPLIED TO MIND AND BODY.

Let us try now whether we cannot trace out and represent with clearness and evidence, some better and more satisfactory idea of this matter, than to suppose the substance of all things to be so much unknown, or that there is any such real being as substance distinct from all that we usually call properties.

Substance, in the proper notion of it, is a certain idea or character which our minds affix to beings, from a consideration that they depend upon no created being for their subsistence; and therefore are said to subsist by themselves; and from this further consideration also, that they appear to be the subjects of various modes or qualities. Not that there is, or can be, any such thing in nature as substance, pure substance, existing abstracted from all qualities, any more than there can be what the schools call *materia prima*, or first matter abstracted from all forms, or than there can be pure qualities existing abstracted from all substances. Who can tell what is motion or resistance, without including the idea of some substance moved or resisting? Nor can any one have the idea of substance in bodies, without the idea of solid extension; nor in minds, without the idea of cogitation, or a cogitative power.

But to proceed further in this inquiry about substance. Body and spirit are the two most general and distinct, if not the only ideas, we have of substances, *i. e.* of such things or beings which we conceive as the subjects or supporters of distinct qualities,

and which subsist of themselves without dependence upon any creature. Now let us, for the present, suppose body to be solid extension, and spirit to be a power of cogitation or thinking, or, at least, that these are the prime distinguishing properties of these two beings, and we will inquire whether there be need of any further idea of some substance to support them.

These two, *viz.* body and spirit, seem to be sufficient supports for all the qualities or modes that we can have any idea of, since they are all either sensible, intellectual, or abstracted, as we shall shew afterward. Body, or solid extension, is a sufficient subject or support for any other corporeal or sensible qualities, whether it be figure, size, colour, motion, rest, resistance, situation, &c. they all plainly subsist in solid extension as in their subject: Think of yellowness, roundness, hardness, swiftness, touching, resistance, or any other bodily qualities, they all want solid extension in order to subsist, and they want nothing else. So spirit, or a power of thinking, is a sufficient subject or support for any intellectual qualities, whether it be consciousness, knowing, reasoning, doubting, fearing, hoping, wishing, willing, resolving, choosing, refusing, &c. all these subsist plainly in a cogitative nature or power as in their subject, especially supposing this power to be always in act. As for such abstracted ideas or modes, as cause, effect, likeness, difference, &c. they belong sometimes to bodies, sometimes to spirits, but they need nothing to support them as their subject, besides a thinking power or solid extension.

And as solid extension and a power of thinking have this one character of substance, that they are sufficient supports for qualities, modes, or accidents; so they have the other property of substance also, *viz.* that they subsist of themselves, independent of any created being: No creature can give being to one particle of solid extension, or the meanest thinking power, or can annihilate and destroy either of them, and put them out of being. Not the feeblest spirit, or the least particle of matter or body, can be utterly destroyed and annihilated by the most powerful creature.

I might add yet further, that since Mr. Locke declares our idea of particular distinct substances to be "several combinations of simple ideas co-existent in some unknown cause of their union, and which makes the whole subsist by itself," why may not a power of thinking be this supposed unknown cause and subject of the combination of the several properties of spirits? And why may not solid extension be the cause of the union of the several properties and qualities of body? What is there necessary to unite all the properties of matter beyond solid extension? Make a trial of all the modes that can belong to any material being: What do they want but solid extension to unite them? Make the same trial by taking a survey of the properties of a spirit: Will not the idea of a thinking power unite them all?

Why then may we not suppose that solid extension and a thinking power may be the very substances themselves, though the names, grammatically taken, may seem to denote property and quality?

The following considerations may perhaps lead the mind into a favourable disposition toward this opinion, or at least relieve the seeming strangeness of it from the charge of absurd and impossible.

SECTION III.

CONSIDERATIONS TO SUPPORT THE APPLICATION OF THE NAME OF SUBSTANCE TO SOLID EXTENSION AND A THINKING POWER.

First, Since our most piercing thoughts cannot reach deep enough to find out, to know, or conceive of any subject, or substratum, that upholds this power of cogitation in spirits, or this idea of solid extension in bodies, why should we imagine there is any such unknown and unknowable being? May we not suspect that learned and logical forms of speaking have introduced this sort of notion into our minds, rather than any physical necessity could introduce it into the nature of things? And why should we suppose and multiply real beings without necessity? Why may not these very ideas of solid extension and a thinking power be supposed to be the substrata or substances themselves, since we have no idea of any other?

Secondly, If we can lay aside all our prejudices in this point, I am persuaded solid extension would appear substantial enough to be called a substance, since even mere empty space, or extension without solidity, hath been, by some philosophers, esteemed substantial enough to subsist by itself, and to deserve the honour of this name. And why may not a spirit or mind be a power and yet a substance, a self-subsistent power in perpetual acts? Do we not know that the acute and laborious schoolmen, among their deep reasonings, tell us, that God is an eternal self-existent act, or almighty power in eternal act? And this certainly inheres in no subject: God is a substance or subject himself: In their way of speaking, they call God the most actual act, and yet that does not hinder them from calling him also the most substantial substance. And what nobler or more grand and illustrious idea can we frame of the blessed God, than to conceive of him as an unlimited power of consciousness and volition, in the most constant and universal activity?

Note, In this case I may so far agree with the schoolmen, as not to make very much distinction between a power of cogitation, or thinking, and that actual cogitation or thought, which is considered in the general and permanent idea of it, as ever existing and as determined to particular objects, simultaneous or successive. And this I may venture to say, because I supposed this power to be in constant and perpetual act, and necessarily so, even in created spirits, when once they are created; and herein they are a bright emblem of the blessed God, all consciousness and activity. It is the very nature of God to be conscious and active; if he ceases to be conscious and active, he ceases to be. Conscious activity is also the essence of every spirit. A noble rank of beings we are, the living and lively offspring and image of that intellectual and vital power who gave us being. Τοῦ γὰρ γένος ἐσμέν, said Aratus and St. Paul.

Thirdly, Consider that if solid extension and a thinking power are but mere modes or qualities, and not substances, then I inquire, May not the substances remain if these modes were destroyed? But destroy solid extension, and in the room of it there will remain a mere nothing. Destroy thinking power, and there remains nothing in its room. We have no idea left. All ideas are utterly banished out of the mind, and all beings are banished out of the world at once by this supposition. Therefore it seems to me that solid extension and a cogitative power are real substances, for if you nullify

them they leave a mere nothing behind them. If you suppose space to be something remaining behind, I have accounted for that in another Essay.

Perhaps you will answer, that the essential modes or properties of a being cannot be destroyed without destroying the substance also, though the accidental modes or qualities may be destroyed while the substance remains; so roundness in a bowl is an essential mode or property, and if you destroy roundness, the bowl is destroyed; it is a bowl no longer; and so solid extension and thinking power may be essential modes or properties of certain substances to which they belong, and therefore they cannot be destroyed without destroying the substance.

To this I reply, that what is only and merely a mode or property (even though it be an essential mode) of any particular being, whether body or spirit, may be destroyed, and yet some substance, some real being, will remain; though, its essential mode being destroyed, it will not have the same form or name, as it had before: Destroy roundness, and the body ceases to be a bowl, but it is body or matter still; destroy the peculiar essential mode (whatever it be) that distinguishes a human spirit from all other spirits, and yet it is a spirit still, though it ceases to be a human spirit. But the case is not so with solid extension and a thinking power; for if you destroy these, there is nothing at all remains, not so much as an idea; and therefore I think they are not so properly mere essential modes, but they are substances themselves.

I know it will be objected here, that though we should grant solid extension to be a substance, yet we cannot suppose a thinking power to be a substance also: A power must have some substance to inhere in, and extension or expansion belongs to all substances whatsoever; and it is probable that extension void of solidity is the substratum of the thinking powers of a spirit.

But may it not be replied, that we have used ourselves so much in logick to conceive power as a mode or property, that it is harder perhaps for scholars than it is for others to drop this prejudice. Yet in common language among heathens, or Christians, "the heavenly powers," or "the powers above," signify God, or gods, or angels; and the Scripture uses this language, for it often calls angels, *principalities and powers*, *Eph.* vi. 12; *Col.* i. 16, and ii. 16; 1 *Pet.* iii. 22.

And as for supposing some extension to be the substance or substratum of every thinking power, I grant we are so tied down by constant and familiar ideas of body to length, breadth, and depth, that we are ready to imagine there can be no being without it. We may allow therefore, say the Cartesians, we may allow young philosophers to keep their ideas of extension together with their ideas of a thinking power, till they have proceeded to search farther into the nature and actions of a spirit, and to converse about the understanding and will, and their operations; and they will find by degrees, that this extension can do nothing toward thinking, nor is of any use in all their researches into the world of spirits; they will find that it is a foreign idea tied on to a thinking power by mere custom; and they will perhaps insensibly drop it by degrees, when they find no use of it in philosophising upon spirits.

I say, this idea of extension is tied on to the idea of a soul by custom, rather than by pure nature. A poor young creature, in the lowest rank of life, being once asked, what she supposed her soul to be; after a little musing, replied, "My soul is my think;" whereby it is plain she meant her power of thinking. And, I believe, the greatest part of mankind, if they were asked the same question, would sooner and more readily reply

that it is something in them that enables them to think, speak, move, and gives them the power of thought and action, than they would say, it was any thing long, broad, or deep.

Another objection against a spirit being a thinking power is this, that a spirit itself has several powers, *viz.* judging, reasoning, wishing, willing, fearing, &c. Now how can one power have other powers? I answer, voice is a power in man, and yet a human voice has the power of singing or music; again, singing has a power of gladdening the heart. Why then may not a spirit, which is a substantial power, have several other modal powers and properties in it?

But I proceed to the next consideration, to shew that solid extension and a thinking power may be substances.

Fourthly, If we will but allow these two, *viz.* solid extension and the power of cogitation to be substances, we are then furnished with all the ideas of substance that are necessary for all the millions of simple and complex ideas of all the different beings, natures, properties, actions, and powers, that we have; for we may refer them all to one or other of these two substances, and conceive them as inhering therein; and we shall not be forced to search further, nor run to some other unknown and inconceivable being, called substance, of which we have no idea, to support any of the modes or qualities of mind or body, *i. e.* of the whole universe of real beings. Allow but these two to be substances, and there is no need of framing any other idea of substance to accommodate all the beings in the universe with something sufficient to uphold all the infinite variety of their properties, or to be the cause of the union of these properties. Solid extension and thinking power will sustain all the modes which we can conceive; now all the substances that we know, are body and spirit, and all the modes that we know belong to one of these.

Fifthly, Let it be considered also, that the supposition of some utterly unknown being, called substance, to be the substratum, or subject of all the properties of body, and such an unknown being also to be the subject of all the properties of mind or spirit, is a notion that carries with it some dangerous consequences, and therefore ought not to be too easily embraced. For if the substance of body and the substance of mind be so much unknown, then the substance of body, as I have hinted already, may be the same with the substance of mind for ought we know to the contrary. If we know nothing of this substance, but that it is something that subsists by itself, and upholds and unites properties, how can we tell but that the very same individual substance may be the substratum or subject both of solid extension with all its modes, and of thinking with all its modes, and may unite the modes or properties of body and mind together? And thus matter may be made able to think, or may have the power of thinking put into it, and which may inhere in it, together with solid extension.

And indeed Mr. Locke was very sensible that his opinion had this tendency, and he even allows the consequence of it, which I call dangerous: For, Book IV. Chap. III. Section 6, he seems to suppose that matter may think; for he speaks thus: "We have the ideas of matter and thinking; but possibly shall never be able to know whether any mere material being thinks or no; it being impossible for us, by the contemplation of our own ideas, without revelation, to discover whether omnipotency has not given to some systems of matter, fitly disposed, a power to perceive and think;" or, as he expresses it afterward, "to superadd to matter a faculty of thinking." And he goes on in that

section to confirm this his supposition. In his *Letter to Bishop Stillingfleet*, he supposes it possible for the substance of body to be the same with the substance of mind, in these words: "The general idea of substance being the same every where, the modification of thinking, or the power of thinking, joined to it, makes it a spirit, without considering what other modifications it has, as whether it has the modification of solidity or no; as, on the other side, substance that has the modification of solidity is matter, whether it has the modification of thinking or no." *Letter 1st to the Bishop of Worcester*, page 66. Thus we see he maintains his notion of a general substance, which he had before ridiculed. And we may observe, that when he asserts that matter cannot think, he uses some of these epithets, mere, bare, pure, incogitative, insensible matter. Book II. Chap. XXIII. Section 15; and Book IV. Chap. X. Section 10, 11, 16. Now why should an author use such limitative terms, as bare, pure, &c. incogitative matter, if he did not suppose some matter might be cogitative?

But if this be true, that matter can have a power of thinking given it, then our own souls may be material beings, for ought we know, and consequently divisible and mortal.

And yet further I add, if this opinion be true, then how can we tell but God himself, even the infinite mind, may have also the property of solid extension, that is, may also be matter or body; and then he may be the same with the universe of beings, as Spinoza fancied; and thus the whole universe, God and this world, may be the same individual substance, which Spinoza maintains with subtlety: For if there be such a thing as an universal ulterior substratum necessary to support solid extension, and to support the power of thinking, and this substance or substratum be so unknown a thing as Mr. Locke supposes, how can I deny any thing concerning it? Or at least how can I be sure that God and the material world have not one common substance? In that section indeed Mr. Locke endeavours to guard his principles or doctrines from the danger of this objection, which he supposes very naturally to arise from his principles and concessions; but I think he neither does, nor perhaps could he effectually secure them from such unhappy consequences.

SECTION IV.

THE OCCASIONS OF MISTAKE ON THIS SUBJECT.

In the last place, let us consider how it comes to pass that the learned world might happen to mistake in this matter, and why they seem so unwilling to admit this doctrine of solid extension and of a power of thinking to be two real substances, or sufficient substrata or subjects for all the qualities of matter and mind.

The *first* occasion of mistake may be this:

In our daily observation of what passes in the material world, we find many of the qualities or properties of bodies continually altered, and new qualities or properties perpetually succeeding the old ones, which are lost or destroyed, but the substance remains still the same: And therefore we suppose, and very justly, that there must be some certain thing, called substance, which supports all these changing properties and qualities in their successive existence. So a piece of wood put into the fire, loses most of the properties or qualities of wood, and becomes fire itself, or a burning coal; its colour

and hardness or firmness are lost; it has acquired a new colour, *viz.* redness, and new powers, *viz.* of heating water, of melting metal, and burning combustible things, &c. In an hour's time this same matter turns into ashes, and then its colour is changed again into a dusky white or grey, the cohesion of its parts or consistency is quite lost, and it becomes quite another sort of body, a million of small atoms, a heap of corpuscles or sands: Yet we suppose the substance, which once had the qualities of wood, still continues, as indeed it does; and that is, I say, solid extension or matter, though it is broke into many little substances or solid extensions. And in the same manner, because we sometimes call solidity and extension two properties or qualities of body, we are too ready to imagine they may be ranked among those many qualities which may be changed, or removed and lost, while yet the substance remains; whereas this is impossible. And yet perhaps this imagination may be one of the springs of our mistake.

So in a spirit or soul, we find infinite varieties of thoughts, wishes, desires, perpetually altering and succeeding one another, and sometimes contrary to one another; and yet we suppose, and justly too, that the substance of the spirit remains the same. But since we sometimes call a power of thinking, a property of a spirit, we are too easily led to rank this also among those many qualities and properties which may be altered while the substance of the soul remains; which perhaps is impossible; and yet this may be the first occasion of our mistake here.

Secondly, Another spring or ground of mistake may be this: Most of these things, which are thus altered, while the substance remains, as in a logical view they are called qualities, so in a grammatical view, the names of them end in *sion*, or *tion*, or *ness*, or *ing*, or *ity*, &c. Hence it comes to pass, that whenever we speak of a thing, which, by a grammatical termination, sounds like a quality, and is sometimes logically represented as a quality, we suppose it loseable while the substance remains; and we fancy it to require some subject, in which it inheres, or some substratum or substance to support it: Thus for instance, when we speak of motion, or when we speak of gravity, we mean a quality or property, which requires something distinct from itself, and more substantial than itself, to support this quality; there must be some substance, which may be moved, or which may be heavy; and, on this account, when we speak of extension and solidity, we are ready to infer the same as we do concerning motion or gravity, *i. e.* that there must be some being distinct from extension and solidity to uphold these qualities: But this is an inference made, without just reason, by mere similarity of sound and termination.

I might represent this matter even by those qualities of body, which are called by the very names of *extension* and *solidity* taken in another sense. We use the word extension, when we see a piece of cloth or spunge may be extended or stretched to a larger size, or shrunk and contracted to a narrower; and this extension or stretching, as well as contraction or shrinking, being alterable while the cloth remains the same, we form an universal idea of extension, as a mere quality; and indeed it is so, when we use the word to signify stretching. So when we feel a piece of wax hard to the touch, we call it solid: We melt it and find it has lost its hardness or solidity, and thence we come to call solidity universally a quality; and, indeed, it is so in this sense, when it signifies hardness; but it does not at all follow, that extension, when it signifies length, breadth, and depth, and is joined, as it were, in one idea with

solidity, as that signifies impenetrability, should be a mere quality, though extension and solidity are mere qualities, when one signifies stretching, and the other signifies hardness. When therefore solid extension is represented in our way of speaking, as the primary idea of matter; surely it is something more than a mere quality: For the sense in which the words are used, when applied to body in general, is very different from the former signification when applied to cloth or wax.

And if we will judge here rationally, according to the rule by which we judge of qualities and substances at other times, solid extension may be properly a substance; for whatsoever qualities in bodies are changed, this has the character of substance, for it is immutably the same. Matter is solid extension, and the same solid extension too, through all the infinite varieties of change of its other properties: This can never be lost, till the matter itself be destroyed or annihilated; nor can this be diminished or increased, but by diminishing or increasing the matter.

In the same manner when we think of a man that has a power of remembering, of inventing, or of composing well, or of moving his limbs, we call these powers modes, properties, or qualities; we observe that in sickness and disorders of animal nature, a man may in a great measure lose these powers, and yet his soul or spirit continue the same in substance still; and therefore we suppose the powers of a soul universally to be all qualities; whereas in truth the power of thinking, *i. e.* of perceiving and willing, is never loseable; it remains as long as the soul continues a soul; and therefore this power of thinking may be the very subject or substance of the soul, in which all other powers of the soul inhere.

There is yet a *third* reason why we are so ready to make solid extension to be two mere qualities of body or matter, rather than the substance of it; and that is, that we fancy them to be two very different things in the essence of body; and that solidity may be destroyed, and yet the extension remain and become empty space: So that solidity looks like a sort of quality, which may be, or may not be added to the same individual portion of extension: Whereas in truth solidity and extension, considered in body, are but as one thing; for if you take away the extension, I am sure solidity is entirely lost; and if you destroy the solidity, that very extension and dimension of that body is also destroyed and lost, and there remains nothing but emptiness and void space; which according to my best opinion is a mere nothing, or an abstract idea. When therefore you speak of superadding solidity to extension, or making body of it instead of space, you do really in your ideas only introduce the substance of body, where before there was mere emptiness, or nothing at all. Solidity in its own nature, howsoever the name of it may sound, is really a thing too solid and substantial to be superadded as a mere quality to the extension of space; for the solid itself has an individual extension, or dimensions of its own, very different from the supposed extension of space. Nor can this superadded quality of solidity turn space into body in any other sense, than by bringing in a real substance in the room of a mere nothing.

Thus I have pointed out some of the causes and springs of our mistake in this matter. Now let it be observed, that having been wont to conceive these ideas of thinking power and of solid extension, in our common and familiar way of discourse, under the form of qualities, when we grow learned, we range them under the head of qualities, modes,

or properties, in logick, which want substances to support them; and thereby we are more confirmed in supposing there must be some other substratum, or substance, or support to uphold them, as all other qualities require.

And this mistake may partly arise, as I hinted before, from the sound of the terminations *ity* in solidity, and *sion* in extension, which are the usual terminations of the names of qualities, which names are called *abstracts*;* and this persuades us that there are some *concretes** belonging to them, *i. e.* some different subjects or substances upholding and supporting these abstract names of qualities: Thus by grammatical names and terminations, and by logical methods of ranging them, we are led insensibly to suppose solid extension and a power of cogitation to be mere qualities, and that there is, or must be some unknown sort of thing, called substance, to uphold them: And thus, perhaps, men frame to themselves new and imaginary beings, which have no existence in nature; and at the same time confess they are unknown and unknowable, and that they have no ideas of them, and know not what they are; and I think I have shewn that nature has no need of them, and therefore fancy need not give them an existence.

To conclude; I have reason here again to repeat the judicious remark of Mr. Locke, that "we ought to put things together as well as we can; but after all there are several things which will not be bundled up together under our ways of speaking." We have usually ranged solidity, and extension, and a power of thinking, under the general head of qualities or properties; and because we have not so many words as we have ideas, nor particular words for things in the various relations in which we survey them, we seem to have occasion sometimes to speak of these things as properties or qualities, and sometimes as substances. We speak of them as qualities or properties, when we call matter and spirit two substances, which are distinguished by their primary qualities or properties of solid extension and of cogitation: But this should not forbid us to range them in another view, under the general head of substance also, since they are two general substrata or subjects of all other imaginable qualities that can belong to body or mind. And if we will but allow these two to be real substances, we are furnished with substrata or subjects sufficient for all our modal or qualitative ideas to inhere in, and we need no further debate about this strange thing substance.

If after all, we find difficulties in adjusting these speculations with a perfect accuracy, let us remember, that our understandings are very imperfect powers; that forms of learning, as well as unlearned prejudices, sometimes lead us into mistakes; and that all things will not easily be collected and bound up under our grammatical and logical ways of speaking, and confined to them only.

* *Note*, The name of *abstract* is given to a word that signifies a quality, as whiteness, without including the substance, or the thing that is white; whereas the word white is a *concrete*, because it denotes the thing or substance together with the quality. And by these distinctions of words we are too often drawn into mistakes, and imagine all *abstract* words, and all *concrete* words, to confine their ideas to the same limits and regulations. But we ought to remember that things are made by God and nature; words are made by man, and sometimes applied in a way not exactly agreeable to what things and ideas require.

ESSAY III.

OF THE ORIGINAL OF OUR PERCEPTIONS AND IDEAS.

FATHER MALEBRANCHE, who was an admirable writer in the last age, and has many excellent chapters in his treatise of *The Search after Truth*, yet has vented a strange opinion, that we see all our ideas in God. It is the known and distinguishing character of this rational author, that he falls into a sort of enthusiasm in his doctrine concerning our ideas of things, and their original. He supposes God to contain in himself all material beings in a spiritual manner; which he calls the intelligible sun, moon, trees, and stars, the intelligible world, and intelligible extension: And that created minds receive all their ideas of external objects, by contemplating this intelligible world which exists in God; which he explains and attempts to prove at large in the sixth chapter of the third book, Part II. and to prepare the way, he labours to refute all other opinions in the five chapters preceding. But among all these opinions of the original ideas, he has neither exactly proposed nor refuted the true Cartesian doctrine, which, with a little alteration, seems the most evident and most defensible of all: And this I shall endeavour to describe in several theses in a distinct manner, wherein we shall see how far God concurs in the ideas formed by the mind.

I. The soul of man is a thinking being, created and preserved with all its capacities by God the almighty Spirit. The Cartesian writers make self-subsistent and perpetual cogitation to be the intimate essence and nature of it: But I had rather say, it is a power of thinking, *i. e.* of perceiving and willing in continual act; and, consequently, it is created capable of forming or receiving ideas in the mind, as well as of exerting volitions, or acts of the will. And as it is brought into being by the creative power of God, so it is the almighty conserving power of God that maintains its being, with this capacity of perception: And it is his common providential concourse that continues it in constant act: By which I mean no more than the same creating, conserving, and concurring influence of God, whereby all bodies were produced at first, whereby they persist now in being, and act or are acted according to their natures, and the laws given them by the Creator.

II. How the soul of man forms or acquires spiritual or intellectual ideas, *i. e.* the ideas of itself, of its own actions, and the ideas of other minds or spirits, we cannot conceive any otherwise than by its own immediate consciousness of itself and its actions, by turning its thoughts inward upon its own existence, nature, perceptions and volitions, operations and affections, and by the remembrance of, and reflections upon its own modifications, as well as by its own consciousness of them at first: This is what Mr. Locke calls the knowledge of things, or gaining ideas by reflection. It is by this means we form or acquire all our ideas of understanding, will, spirit, assent, dissent, fear, hope, &c.

III. How the soul gains any new ideas of bodily things, when it is in a separate state, we are not so well capable of determining, till we arrive at that state ourselves. But in this present state of union with a body, we may give some happy guesses how we come to form corporeal ideas, or to acquire sensations of what relates to the body. This is what Mr. Locke chiefly calls gaining ideas by sensation. And in order to this we must first consider, whether a spirit could receive any sensations from matter, without a special union to some particular body; and then what is meant by the union of a spirit to a body.

IV. As to the first, we cannot conceive how a spirit can receive any sensations or ideas from corporeal objects, without its particular union to some certain body by that God who created it. Since body and spirit are of such widely different natures, that it is impossible they should touch one another, a body cannot give notice to a soul to raise any idea or perception in it, by a jog or shake of any kind.

Besides, when any particular body moves, can all spirits perceive it? No surely. Or can any one spirit receive sensations from the motions of all bodies in the world? By no means. Either of these is a most extravagant fancy, contrary to all experience. It is evident, that one particular soul receives sensations immediately from one particular animal body, and from that alone: Other bodies can impress no immediate sensations or ideas on that spirit.* Now why is it only from this one body, that this one spirit can receive impressions or sensations? The soul did not choose this body to make itself conscious of its motions: Much less could the body choose this soul, to impress sensations on it: Nor can it be resolved into any thing but the will and appointment of the great God their common Creator, who made this soul and this body, and united them into a man.

V. We are in the next place then to inquire, what is meant by the union of a spirit to a particular body, or wherein doth it consist?

When we say a spirit is united to an animal body, this doth not mean mutual touching of each other; for, as we said before, this is impossible. *Tangere vel tangi nisi corpus nulla potest res.* Lucretius is here in the right: But the chief thing wherein this union between an individual human body and an individual spirit consists, so far as we can find it, lies in these two laws or appointments of God our Creator.

1. That when some particular impressions are made, or particular motions are excited in that part of that individual body which is called the *sensory*, whether they arise within itself, or are conveyed from the outward organs of sense, or any other parts of body by means of the nerves, God hath powerfully ordained, that that individual spirit shall have such particular perceptions or sensations, or such ideas of outward objects.

2. That when that spirit wills to raise such a particular motion in the limbs, or in such parts of the body as God hath subjected to voluntary motion, he hath powerfully ordained that such a motion shall be presently excited by the means of the nerves or muscles in those limbs or those parts, upon the mere volition of the soul; for we have no knowledge of any other executive power that does this: All that we are conscious of

* I do not pretend to determine here, that it is not possible, in the nature of things, for one soul to be conscious of the motions of two, or of twenty bodies; nor do I know that the nature of things forbids two or more souls to receive sensations from one body. Either of these, for ought I know, is very possible, if God please to appoint it. All that I maintain here is, that this is not the present course of nature, or settled order of things in our world; and much less have souls or bodies any such original innate power in themselves to hold immediate or reciprocal communications with multitudes.

is, that the soul wills, and the body moves. In these two things chiefly consists the union of soul and body.

VI. Here it may be proper to observe, that there is some particular part of that body, which may be called as it were the *common sensory*, or the palace of the soul; not where she resides, as in a proper place, as will appear hereafter, but where she receives immediate notices of things that relate to the body, and where she hath more immediate influence in moving the nerves and muscles, which serve to move the limbs and moveable parts of the body.* Now, this is evidently the brain, or some special part of the brain, which appears from these three things eminently:

First, Because all the nerves, whose extremities are wrought into the several organs of sense, *viz.* the eye, the ear, the nose, the tongue and palate, have their spring or origin in the brain; and the nerves which subserve the general sense of feeling, and which are spread through all the body, have their origin there also: And thus when the outward extremity, or other end of those nerves, is moved or affected any way, the motion is communicated immediately to the inward origin of them in the brain, to give notice of all things that affect the outward or any distant parts of the body, whether they be shapes, motions, colours, sounds, tastes, smells, heats, colds, *&c.* And it is by means of these nerves also, which have their origin in the brain, that every extreme part of the body is put into motion at the will or command of the soul. It seems proper therefore to suppose the soul to have its more immediate government and operations near the origin of the nerves, which are so much the instruments of its perceptions and operations. Now, to confirm this by experiment, I add,

Secondly, If any of the limbs are cut or bruised, while there is a ligament tied so hard round the limb, that there can be no communication of that motion by the nerves to the brain, the soul feels it not, the man hath no perception or sensation of it. And if the nerves which go from the brain to any limb are cut, the will cannot make that limb move.

Thirdly, When we set ourselves to think or study, we feel and are conscious that we employ some operative power or powers within the skull, and perhaps generally a little within the forehead: And the reason why we feel it there is, because the corporeal motions and traces are there formed, and preserved, and renewed, which serve to raise or awaken ideas in the mind, and which are ordained to minister to the soul in its intellectual or sensitive operations while it is in this united state.

VII. The perceptions which a spirit has by means of its union with the body in this present state, are chiefly of these three kinds:

1. Such as have no external objects for their exemplar, nor do they so much as seem to want any; for they are not representations of objects, but mere sensations of the soul: Such are hunger, thirst, pleasure, ease, pain, and in general our appetites and passions. Though some of these, *viz.* ease, pain, &c. may be occasioned by outward objects, yet we are in no great danger here of making a false judgment about them, and of imagining that these perceptions have any resemblance to those outward objects which are the causes or occasions of them. No man thinks there is pain in the sword that wounds him, and gives him pain. Pleasure and pain appear to be mere sensations, rather than proper ideas; yet it is granted we can form an idea of them afterward, by considering

* Des Cartes and his followers supposed this common sensory was the pineal gland, which is situated almost in the middle of the brain; and some of their reasons for it are not contemptible, though I can by no means confine the sensory to such narrow limits.

what those sensations are, or by reflecting on what we feel; and thence we gain the ideas of hunger, thirst, pain, pleasure, &c. which very sensations are the exemplars or patterns of those ideas.

2. Another sort of perceptions, which we obtain by union with the body, are such as seem to be proper ideas rather than mere sensations, yet they have no real objects without, which are the proper exemplars of those ideas; there is no outward being which those ideas are like, and yet they seem to represent some outward originals or exemplars, and we are ready to suppose they have something from without that resembles them: Such are the secondary and sensible qualities of bodies, *viz.* colours, sounds, tastes, smells, cold, heat, &c. These have been abundantly proved by philosophers not to have any real existence in outward objects, such as we perceive them; and though we generally call them ideas because they seem to represent outward objects, yet really they are mere sensations which the God of nature has ordained to arise in us on occasion of some motions, strokes, and impressions, which outward objects raise or form upon our organs of sense, and which are thence conveyed to the brain or common sensory. See Mr. Locke's excellent discourse on that subject, *Essay*, Book II. Chapter VIII.

It is granted here, that the bulk or vulgar part of mankind, are deceived in passing a rash judgment, that there are such qualities in outward objects as resemble these ideas in the mind; yet there is no inconvenience to human life arising from this mistake; for all the valuable purposes in life are answered by these sensations, since we have sufficient notice thereby what objects are the causes of them, whether these objects are real outward exemplars of them, and do resemble them, or not. If I know that wormwood will give me a bitter taste, and a bell will make a tinkling sound, I can judge as well how or when to use wormwood or a bell, while I lie under this mistake, and while I suppose the wormwood itself to have the bitterness in it, and the bell itself to have the sound in it, as if I believed this sound and this bitterness to be only sensations in my mind, of which the bell and the wormwood are the causes or occasions. And as for persons of science and inquiry, there are ways and means of experiment and reasoning, whereby they may find out, and have actually found out this vulgar mistake; and they are or may be convinced and assured, that these ideas of sensible qualities have no external resemblances to the objects which excite them, and thus they may undeceive themselves.

Now in forming these ideas of secondary or sensible qualities, there is no need that the traces upon the brain, which are the more immediate occasion of them, should any way resemble the ideas, since there is no real resemblance in the outward objects themselves, which are the prime or remote occasions of them: But God hath ordained, that whensoever such motions and traces are formed in the brain, the soul should immediately form such ideas, or have such perceptions raised in it.

3. The last sort of perceptions which the soul acquires by its union to the body, are such as have real proper objects without itself, which are the true originals and exemplars of these ideas or perceptions, as well as the causes or occasions of them; such are the ideas of extension, solidity, body, with all the primary qualities of it, such as shape, rest, motion, size and situation.

It is most highly probable, if not sufficiently evident, that these do exist without us in such a manner as we perceive them; and that for this reason among others, that we have notice of them by the touch, as well as by the sight; and we cannot suppose that

God has so formed our natures, that two senses should join to deceive us, when we have no way left to undeceive ourselves.

In order to prove yet further that these ideas of the third sort have real objects which resemble them, I add, it is very possible that there may be such real objects, and then we need seek for no other reason why God appoints us to have such ideas, besides the similarity of their objects, since God and nature do every thing the shortest and plainest way: Whereas it is impossible that the ideas of the first and second sort should have any real objects that resemble them, and therefore they must be traced to another spring, even to the divine wisdom and volition without any similarity in the object.

And indeed, unless this be allowed, the world of bodies in which we dwell, and of which our bodies are a part, must be mere chimerical and fantastic universe; but it is highly improbable that God has made so vast a creation of spirits to dwell in a world of phantasms for six thousand years successively; or rather that each single human spirit should contain in itself such a fantastic world, with endless and unavoidable illusions, mistakes, and suppositions that such a world exists without us. And however some ingenious men have erected such a fantastic world, in their philosophemes, I can hardly think that any man ever believed it: A late author of the *Inquiry into the Nature of the Human Soul* has refuted this opinion, Section 7.

Now in these last ideas, we may suppose that the strokes or traces which are formed on the organs of sense, and which are conveyed thence to the brain, may in the shapes or motions thereof have some resemblance to the external objects which are the occasions of them. So the very figures of a triangle or square, of a house or tree, of a flying bird or falling hail, are traced upon the retina or inward net-work of the eye, and perhaps conveyed thence to the common sensory in similar or correspondent figures.

VIII. Though the traces and impressions which are made on the brain should never so much resemble the external objects that strike and impress them there, that is, though a triangle drawn in a paper should form a triangle in the eye, and impress or convey the same figure to the common sensory, yet these impressions cannot of themselves have an efficacious and immediate influence upon a mind or spirit, to excite or form similar ideas in it: For since mind and body are two distinct beings so entirely different in their whole nature, since all contact between mind and body is impossible, we cannot conceive how any corporeal motions or figures impressed or traced in the brain, should have an efficacious power in and of themselves to give any notices to the soul, or to raise perceptions or ideas in a mind or spirit.

It is not therefore any corporeal traces, motions, or impressions in the brain, whether similar or dissimilar to the objects or things which occasion them, that can be in a most proper sense the self-sufficient and effective causes of those special ideas or perceptions in the soul, which are occasioned by them.

IX. Yet since it appears by universal experience, that whensoever these particular motions or traces are impressed by outward objects on the senses, and by them conveyed to the brain, suitable and peculiar ideas are also raised or formed in the mind, we have reason to suppose that God the Creator ordained by an almighty volition, that this should be the way whereby the mind should acquire or form these ideas: And it is God also who ordained, that whensoever the soul wills to move the limbs of the body, the body should exert those particular motions.

And indeed it is in this divine decree, or law of creation, which runs through all ages, and exerts its perpetual influence in all mankind, that the union, or rather unition of a particular soul and particular body consists. When a human body is so far formed as to be fit to receive such impressions on the brain, and fit to exert such motions of the limbs, then it may be probably supposed the creating influence of God exerts itself in causing a spirit to exist, and in this manner to be united to this human body.

Then begins the communication between soul and body, which continues during the life of this animal nature: Then the traces in the brain, that are formed by some peculiar dispositions or irritations of the fibres in the stomach or throat, occasion the first sort of sensation, *viz.* hunger or thirst, pleasure or pain: After that those peculiar impressions in the brain, which are raised by the secondary or sensible qualities of body, produce in a soul a second sort of perceptions, which are also called ideas, such as the perception of particular colours, tastes, and smells: And then also these special motions or traces on the brain, which are raised by the primary qualities of corporeal objects, such as shape, motion, size, &c. raise in the soul the third sort of perceptions, or those proper ideas which are similar to, and correspondent with the outward objects which are the occasion of these impressions. Thus the mind gains these three sorts of perceptions; but all these are originally owing to the powerful appointment of God uniting a soul and body according to these laws.

Thus perhaps, in the most strict and philosophical manner of speaking, neither the external objects, nor the impressions made by them on the brain, are sufficient to be the real proper producing or efficient causes of the ideas in the mind, since body cannot affect spirit by any properties that we know in it. Nor is the mind itself a proper, immediate, sole, or sovereign cause of her own sensations or corporeal ideas; for how should the mind know what sensations or ideas to form or excite, when any particular strokes are formed in the brain, since she can perceive no real and natural jog or admonition from any corporeal impressions, traces, or images? Besides, if the mind has any hint what ideas to form or excite, then it already perceives those objects, or it has those perceptions, and it is useless to form a new one.

X. It follows then, that the original, true, and proper cause of those ideas is the prime almighty volition of God, as Creator and preserver of all things; which in itself being simple and eternal, produces all manner of simple and complex, modal and substantial beings, in their various determined seasons, by those mediums, and according to that order and connection of things which itself first established in the creation: And the production of all things in this manner may be properly called, the order, or law, of nature.

XI. Therefore we may justly be allowed to use the common methods of expression in this case, *viz.* that the soul itself has these perceptions naturally, and that she naturally forms these ideas of corporeal beings; and that the corporeal objects impressing particular traces and images on the brain, are the occasional and natural causes of these perceptions or ideas.

Thus we must grant also, that the volition of the mind to move the arm or the tongue, may be called the natural cause of the motion of those members, for it is according to a law of nature, which God the Creator has appointed; though the influence which that volition has on that motion be not so properly natural and efficacious, as to be sufficient in and of itself; but the efficacy rather proceeds from the almighty volition

of God thus uniting the soul to an animal body, according to these laws of his own appointment.* Of which see more afterwards.

XII. It is no difficult matter to allow this account of things to be true. Concerning the influence that mind has on body, or body has on mind, and to ascribe it all to the supreme and efficacious appointment or will of God, when great philosophers now-a-days suppose the mutual influence of bodies moving each other not to be so evidently the proper, native, and necessary effect of those material beings on each other, but rather of some divine appointment, or certain laws of nature which God has made. Thus we say, that the bowl A in motion, striking the bowl B at rest, naturally causes it to move, or produces motion in it, although perhaps the motion of the bowl B more properly proceeds from the efficacious and original appointment of the Creator, who wills that one body should move when another strikes against it.

Mr. Locke, in Book II. of his *Essay*, Chap. XXIII. Section 28, supposes the communication of motion from one body to another by impulse to be as hard to be accounted for as the communication of motion to a body by any thoughts or volitions of the mind: And it is still more justly supposed, that Sir Isaac Newton's doctrine of the influences of attraction or gravitation, which the planets have upon each other at such immense distances of empty space, must be resolved into such a law of nature or efficacious divine appointment.

And yet we still use the common methods of speech, and say, that the bowl A striking the bowl B, naturally makes it move; that the sun naturally causes the planets to move or tend towards itself, and thereby keeps them in their several orbits. And in the same manner we say, the soul forms ideas naturally by its understanding or perceptive power, and it moves the limbs of the body naturally by its will: And unless we continue to use such forms of expression, which are the constant language of God and men in Scripture, and in all natural and civil affairs, we shall almost destroy the very notion of cause and effect among created beings, and by introducing the divine agency immediately into all particular effects, and forming our expressions according to it, we shall exclude all dependency of created beings upon each other, and their several connections which the God of nature and of order has ordained among them.

The laws therefore, or appointments which God has made, whereby body moves body, or whereby a spirit moves a body, or whereby a body excites ideas in a spirit, may all be called natural, because nature is that order which God the Creator has appointed among the creatures he has made.

XIII. When these traces or impressions are once formed in the brain, to which such particular sensations or corporeal ideas are attached by divine appointment, it must be observed that whenever these traces or impressions are repeated or awakened in the brain again, though there be no such outward object present, nor any such outward cause to excite them, yet the soul hath the same ideas or sensations raised, repeated, or

* *Note*, The words nature and natural may be taken in two senses: First, they may denote an original power in matter and mind, sufficient mutually to influence each other, arising from their very nature or essence and constitution: Now such a native or natural power is denied: And yet this power may be called natural, with regard to the constitution of man, as consisting of a soul and body united; because God has appointed them by his almighty will to act in this manner mutually on each other in their state of union, and thus he has made it a law of their nature.

awakened in it; because these ideas or sensations are immediately attached to those particular motions in the brain, and not to the outward objects, or to the first cause of them.

Hence proceed the powers of imagination, and memory, and dreaming, &c. and for this reason we may feel hunger and thirst, pleasure and pain, even in dreams, though there be no external causes to excite them; and when we are awake we may raise ideas of ten thousand shapes and colours of sensible and bodily objects which are absent, when they have once formed their peculiar and proper traces on the brain before.

When the same ideas or perceptions which we had before are again excited in the soul, without the presence of the same object, or the same occasion, this is called memory, supposing that we have a consciousness that we had this perception or this idea before; especially when the same ideas have the same qualities, and are joined or situated in the same manner as before: But if the ideas are varied, enlarged, diminished, multiplied, or joined and mingled in forms and qualities different from what we had in our first perceptions of them, this is called imagination, or the power of fancy.

XIV. Though our intellectual ideas, such as the idea of thought, knowledge, will, reason, spirit, &c. are not originally formed in us by impressions or traces made on the brain, but by a consciousness of, and reflection upon the powers and operations of our own souls, as was said before, yet while we are in this state of union with the body, it is highly probable that these very ideas are quickly attached to some words or sounds which make their impressions on the brain; and therefore when these impressions in the brain are again repeated, or these traces awakened by these words or sounds, the soul has these intellectual ideas which are attached to them, repeated or raised afresh, and they become actually present to the mind; and thus we are assisted in the memory or recollection even of intellectual things by animal nature in this present state: For though our intellectual ideas themselves cannot be traced, nor drawn, nor painted on the brain, and consequently can have no similar impressions made there, yet they may be closely connected or attached by custom to certain corporeal motions, figures, strokes, or traces, which may be excited or delineated there; which traces or motions were first raised by the reading or hearing words written or spoken, which were designed to signify those incorporeal ideas or objects.

XV. When the soul sets itself by an act of its will to recollect any former ideas, corporeal or intellectual, it is very probable that it employs some finer or more spirituous parts of animal nature to open all the kindred traces that lie in that part of the brain, till at last it lights upon that particular trace which is connected with the desired idea, and immediately the soul perceives and acknowledges it. It is in this manner that we hunt after a name that we have almost forgotten; as for instance, suppose the name to be Tompkins, we think of all the names that end in *kins*, *viz.* Wilkins, Watkins, Jenkins, Hopkins, &c. till at last we light upon the name Tompkins, which we sought; or suppose we seek after the name or idea of a temple, we rummage over the traces of house, building, palace, church, till we light on the idea and word temple.

Thus we have seen the ways and manner whereby the soul of man comes to acquire its ideas at first, both of corporeal and intellectual objects, and that is, by sensation and

reflection; we have also made a probable guess how these ideas are treasured up and recollected while the mind is united to the body.

XVI. But besides these two sorts of ideas, there is a third sort, which are properly called abstracted ideas; such as are not the express representations of any corporeal or spiritual beings just as they exist, but are as it were a part of our ideas of some spiritual or corporeal things abstracted from the other parts; or at least they are ideas drawn from their real or supposed properties abstracted from the beings themselves, or from some modes or affections of these corporeal or spiritual beings, or sometimes from the mere relations that several beings bear to one another. Of these abstractions there are several sorts and degrees, and consequently there are ideas which are more or less abstracted.

The first sort of these ideas, which are least abstracted, are ideas of common and general kinds of being drawn from particulars or individuals; such as a man, a bird, a flower, a pigeon, a spirit, &c. Now these abstract ideas are formed in this manner: I see several pigeons, I observe they are birds of such a shape, and size, and motion; one is of a dark brown colour, a second is white, and a third is speckled: But I omit or leave out these particular colours, and all other peculiarities in which they differ, and abstracting from them the things in which they agree, I keep those only in mind, *viz.* a bird of such a shape, size, and motion, and I call this a pigeon: Now this is a general name for all the birds of that kind, and this we call an abstracted idea. So we form the general idea of a spirit, by considering the soul of Peter, Thomas, George, &c. and leaving out their different personal properties and individual circumstances, we retain only those ideas wherein they all agree, and call that a spirit.

Note, This first sort of abstract ideas may still be called corporeal or intellectual ideas, according to the nature of the objects whence we derive them, though they are not completely like those objects, because they represent but that part of them only wherein they agree with others of the same kind.

Now these abstracted ideas evidently arise from a power that is in the mind itself to abstract or divide one part of an idea from the other, or to separate mingled ideas and conceive them apart.

Another sort of abstracted ideas, and which indeed are more properly called by that name, are general relations which arise from comparing one thing with another, and from observing the relations that one thing bears to another: And then the mind abstracts those relations from the things which are related, and treasures up those relations as a distinct set of ideas, even while the things which are related, are neglected or forgotten; such are cause, effect, likeness, difference, whole, part, &c. I might give an instance thus; when I see a sword wound a man, or when I am conscious that my soul forms an argument, I conceive the sword to be the cause, and the wound is the effect; or I conceive the soul is the cause, and the argument is the effect: Then I reserve these ideas of cause and effect for general use, and apply them very properly to a hundred other cases, when I have no further thought of a sword or a soul, which occasioned my first ideas of causality. These are pure abstract ideas.

Some absolute modes, properties, or affections, borrowed from individual beings, as well as their relative modes, or relations, will also afford us such kind of pure abstracted ideas; such are the ideas of essence, existence, duration, substance, mode, &c. which are

formed in this manner. Suppose I think of a bowl as subsisting by itself, and that it is both round and heavy; I conceive of the bowl as a substance, and of roundness and heaviness as modes belonging to it: So when I think of a spirit as a thing that subsists of itself, and that this spirit is grieved or joyful; I infer that spirit is a substance, and joy and grief are modes of that substance. Then I abstract the ideas of substance and mode both from the corporeal and the spiritual ideas which first occasioned them; and though I think no more of a bowl or a spirit, of roundness or heaviness, of joy or grief, yet I retain the abstracted ideas of substance and mode, and apply them to a thousand things besides.

As the ideas of cause, and substance, and mode, may be properly called pure abstracted ideas, so the causality or the substantiality of a thing, or its modality, are yet more abstracted ideas, or have another degree of abstraction; for these words signify only the view or consideration of a thing as a cause, as a substance, or as a mode. Such also are the ideas of genus and species, of noun, verb, &c. and a multitude of such very abstracted ideas belong to common speech as well as to learned writings.

Here let it be noted, that the ideas of cause, effect, substance, mode, likeness, difference, and many other abstracted ideas of this sort, are precisely the same ideas, whether they are drawn originally from corporeal or from intellectual beings, and therefore they are plainly different from the first sort of abstract ideas which are either intellectual or corporeal; nor can these be ranked under either of those two classes, for they are ideas of another distinct kind, and make a class of their own, *i. e.* pure abstract ideas.

If therefore we confine ourselves strictly and entirely to those two things which Mr. Locke asserts to be the springs and causes of all our ideas, *viz.* sensation and reflection, without admitting this third principle, *viz.* the soul's power of comparing ideas and abstracting one from another, we shall hardly account for the numerous abstracted ideas which we have, whereof many are neither intellectual nor corporeal, though they are all evidently at first derived from corporeal or from spiritual objects and ideas; and the original remote springs of them may be sensation or reflection, though these are not the immediate causes of them. See more in the *Treatise of Logick*, Part I. Chapter III. Section 1.

ESSAY IV.

OF INNATE IDEAS.

SECTION I.

THE COMMON OPINION WELL REFUTED BY MR. LOCKE.

THE common opinion of innate notions and innate ideas, against which Mr. Locke so earnestly contends, I take to be this, *viz.* that there are some certain ideas of things, and some certain propositions, both of speculation and practice, or of truth and duty, which are explicitly wrought into the very nature of man, and are born with all mankind; which ideas and propositions are supposed to be the first principles of our knowledge, and original rules of all our judgments and reasonings about natural or moral subjects; that they stand in the soul as axioms or maxims, and are the propositional principles of our religion and virtue, of our duty both to God and man, though they lie hid, and we are not actually conscious of them till some special occasion calls them forth to sight.

The propositions are reckoned such as these:

1. Of the natural kind, *viz.* What has no being has no real properties: Whatsoever acts, is, or exists: One thing cannot be the cause of itself: It is impossible for a thing to be and not to be, in the same sense and at the same time: The whole is greater than each part, &c.

2. Of the moral kind, *viz.* Parents must be honoured: Falsehood must not be practised to our neighbour: Injury must not be done: Contracts should be fulfilled, &c.

3. Of the religious kind, *viz.* There is a God: God is to be worshipped: God will approve virtue; he will punish vice, &c.

These have been supposed to be actual innate propositions: And all the ideas of which these are composed must certainly then be innate ideas, if they are actually existent in the mind as soon as it begins to be; however, neither the propositions nor ideas may actually appear there to ourselves, till some occasion call them forth.

Now those writers who hold innate ideas in this sense, seem to lie under a great mistake.

Mr. Locke has ingeniously and sufficiently refuted this sort of doctrine of innate ideas, and innate propositions, in his discourse on that subject: Wherein he discovers that there is no necessity from reason, or from religion, to admit them; because God having given the mind of man a capacity of forming ideas of natural and moral things, and of comparing and joining or disjoining them by judgment, has sufficiently furnished men with necessaries for knowledge: And God having given us a power of reasoning, we are able from the most common and obvious things to infer both his own being and our duty considered merely as creatures; and there is no such necessity of his actual

implanting in the mind all those ideas and long trains of propositions, whether natural or moral, which some men have supposed to be innate. Thus far I think we may safely agree with Mr. Locke, who reasons exceeding well on this subject, and most of his arguments, I think, are just and convincing.

And yet I believe still that many simple ideas are innate in some sense, though not actually formed in the mind at the birth; and perhaps also some general principles, both of truth and duty, may be called in some sense innate, though not in the explicit form of propositions. Let us consider things in the following manner:

SECTION II.

IN WHAT SENSE MANY IDEAS ARE INNATE.

First, The simple ideas of light and colours, sounds, tastes, and smells, *viz.* red, blue, sweet, bitter, loud, shrill, cold, hot, &c. even all the sensible qualities, which are called the secondary qualities of bodies, with all the infinite variety of their mixtures, though they are not immediately, actually, and explicitly impressed at once on the mind at its first union to the body; yet they may be called in some sense innate, for they seem to be given to the mind by a divine energy or law of union between soul and body, appointed in the first creation of man: And this law operates or begins its efficacy in all particular instances, as soon as those sensible objects occur which give occasion to these sensible qualities and ideas to be first perceived by the mind.

The reason why I think so is this: The millions of impressions that are made upon the senses by outward objects, do necessarily excite nothing but an equal variety of impressions or motions of certain fibres in the brain, and form perhaps certain courses or traces of some fine fluid, called the animal spirits, there. But among this infinite variety of fibrous motions in the brain, or lines and strokes which are drawn there, or traces of the animal spirits; none of them do necessarily and in their own nature raise in the soul the sensations of these secondary qualities as they are called, *viz.* colours, tastes, smells, feeling, sound, &c. such as green, blue, red, sweet, sour, stinking, cold, warm, shrill, loud, &c. Sensation is a very different thing from motion: It is only God, the author of our nature, who really forms or creates these sensations and all these ideas of sensible qualities, in a soul united to a body; and he has appointed these ideas to arise, when such particular impressions shall be made on the brain by sensible objects. And yet man may be said to form them, because what hand soever God has in it, it is by one uniform law of creation, or original appointment, which has a lasting efficacy through all generations of men: And on this account these ideas may be so far called innate; since it is not all the impressions of objects on the organs of sense, nor the conveyance of these impressions to the brain, could raise or form these ideas in the soul, but only the divine appointment of such effects, according to laws of union which he has established between the souls and bodies of all mankind.

I will not add any thing here concerning our ideas of those qualities of bodies which are called primary, such as the figure or shape, size, motion and rest, and situation of the parts of matter; because the strokes which are formed on the brain by these objects, or these properties of matter, may perhaps resemble the objects themselves; for such

kind of lines, and figures, motions, &c. may be formed on the brain itself: And perhaps some persons may imagine that the ideas of these corporeal primary qualities in the mind are raised naturally and entirely from the mere outward impressions on the senses, because these impressions are like their objects; though I think there must be an almighty volition of the Creator to give the soul even these ideas also: For the soul has not proper eyes to see these figures and motions on the brain, though they may never so much resemble these primary qualities, that is, those motions and figures which are found in the objects without us. And a soul being immaterial, can receive of itself no natural impressions from matter or body.

But when we turn our thoughts to the secondary sensible qualities of body, we are sure that all possible figures, stamps, motions, alterations, traces, which are made by these sensible objects on the brain, are but primary qualities still; they are nothing but shapes, motions, &c. and they do not at all resemble these ideas, sensations, thoughts, or perceptions of sensible or secondary qualities that are occasioned by such corporeal motions. What possible resemblance is there between the motions of a fibre of the brain raised by the grass or the sky, and the idea of green or blue? Between the figures or traces impressed on the brain by sugar or wormwood touching the tongue, and the ideas of sweet and bitter, which are occasioned by that touch? Yet God our Creator hath by an original almighty volition ordained, that whensoever such motions or traces are made in the brain, the soul by the occasion thereof shall have such a perception of sweet or bitter, or form such an idea as green or blue: And this almighty will of God, whereby the soul comes to have such perceptions, or to form such ideas, is an uniform law of creation, as I before expressed it; it is one lasting appointment, and may be called the implanting or instamping these ideas upon the mind; since no manner of corporeal motions can have any necessary and effectual influence of themselves to excite these perceptions in the mind, because it is a being incorporeal, intangible, and immoveable. And indeed this sort of innate ideas, and in this sense, Mr. Locke himself seems to own, Book II. Chap. VIII. Section 13.

SECTION III.

IN WHAT SENSE SOME TRUTHS MAY BE INNATE.

SECONDLY, as these ideas may in this sense be called innate, so some principles of knowledge, though not explicit propositions, may be in a sense innate also. It is fully granted that such axioms as these: Whatsoever acteth hath a being: The whole is greater than a part: Nothing can be the cause of itself, &c. are not actually inscribed on the mind of man in its first formation; yet the very nature, make, and frame, of a rational mind is such that it cannot but judge according to such axioms as these: And whatsoever particular judgments or propositions it forms, though it does not deduce them from such explicit general axioms written within itself, yet it always judges and reasons according to these axioms, and cannot judge contrary to them: They are so interwoven with the very constitution and nature of a reasoning being, that they are the constant principles of all its assent or dissent in particular inquiries: And in this sense perhaps they may be called innate. They are, as Mr. Glanvil calls them, in his *Vanity*

of Dogmatizing, octavo, p. 81, " The very essentials of rationality; and if any ask how the soul came by them, I return, as quantity did by length, breadth, and depth."

To determine how great is the number of these propositions is impossible, for they are not in the soul as propositions; but it is an undoubted truth, that a mind awaking out of nothing into being, and presented with particular objects, would not fail at once to judge concerning them, according to, and by the force of some such innate principles as these, or just as a man would judge who had learned these explicit propositions, which indeed are so nearly allied to its own nature, that they may be called almost a part of itself; they are in some sense the very nature of the mind considered as judging or as reasoning, nor is it possible for a reasoning faculty to exist without them.

Therefore I take the mind or soul of man not to be so perfectly indifferent to receive all impressions, as a *rasa tabula*, or white paper: And it is so framed by its Maker as not to be equally disposed to all sorts of perceptions, nor to embrace all propositions, with an indifferency to judge them true or false; but that antecedently to all the effects of custom, experience, education, or any other contingent causes, as the mind is necessarily ordained and limited by its Creator to have such and such appointed sensations or ideas raised in it by certain external motions of the matter or body to which it is united, and that while the organs are good and sound it cannnot have others, so it is also inclined and almost determined by such principles as are wrought into it by the Creator, to believe some propositions true, others false; and perhaps also some actions good, others evil. Therefore I might add,

SECTION IV.

IN WHAT SENSE SOME RULES OF DUTY MAY BE INNATE.

Thirdly, there may be some practical principles also innate in the foregoing sense, though not in the form of propositions: I mean thus; that in the moulding of our souls God has given us faculties to discern the justness or fitness of such and such actions; and together with this discernment he has also inwrought into our souls some concomitant movements to judge aright, at least concerning the more general and obvious instances of virtue and vice, religion and morality: Such as, Contracts are to be kept: Truth and veracity should be practised: Murder ought not to be committed: God must be honoured, or He that made us has a right to govern us, &c. though these are acknowledged to be much fainter and feebler than speculative principles, because they have been more corrupted by men, as more frequently contradicting their sensual inclinations and vicious passions; whereas in matters of speculation, there is no such opposition in our natures, in their present degenerate state.

Yet it must be confessed, that at the very first proposal, when the terms are understood, a rational being cannot but assent to this proposition, He that made me should govern me: It is right and fit that contracts should be kept. He cannot but see the fitness of these moral propositions, as he cannot but see the justness or truth of this natural one, that All the parts taken together are equal to the whole. It seems to me to be the very nature of his reason so to judge: His soul is not therefore equally indifferent to these propositions, and to the reverse or contraries of them.

SECTION V.

OF THE FOUNDATIONS OF MORAL VIRTUE, AND OF A MORAL SENSE OR INSTINCT.

THERE has a controversy risen long since these papers were written, between two considerable authors, Whether the soul of man judges of moral good and evil by an inward principle or instinct, which is called the moral sense, antecedent to all reasonings; or whether it is by its survey of the moral propositions offered to the understanding, and seeing the rational fitness and unfitness of things, that it judges of them by reasoning? Methinks we need not be much at a loss to answer this question. It is plain to me, whensoever such moral propositions are offered to the mind, it judges, or ought to judge of them by surveying the fitness and unfitness of things, the right and the wrong, by the light of reason: But then if you come to ask, Why does reason judge that this is fit and right, the other is wrong or unfit, *viz.* that contracts are to be kept rather than broken, &c. I say, it is the very nature of an intelligent being to perceive this fitness, and it is the nature of a reasoning mind to judge so, and it cannot judge otherwise when free from all evil biasses: Just as when the eye sees a round globe put into a neat round hollow case, it sees the fitness of these two things to each other; and the soul judges, and cannot but judge, that there is a mutual fitness between the globe and the round case, and that there is a mutual unfitness between such a globe and a square case.

I allow, therefore, that there is such a sort of natural sense in the mind, if it may be called so, which beholds these congruities and fitnesses of natural things, and their relation to each other, and which inclines and determines it to judge thus concerning natural propositions or axioms of truth; so that in more open and obvious instances, the weakest mind can scarce judge otherwise. The understanding is like the eye of the soul, it sees the fitness of the subject and predicate to each other, and in such propositions it cannot but see it; and thus it judges that they must be joined together. It is so much the very nature and make of the soul to see and judge of things in this manner, that I take it to be a part of reason itself, which, as it were, implicitly contains in it these natural axioms of truth or principles of judgment inwrought by the Creator of souls; not in the explicit form of propositions, but as principles and springs of judgment and reasoning.

I allow also, in the same manner, that there is such a thing which may be called a moral sense in the mind, which inclines the man to judge right, and especially in the more general, plain, and obvious queries about virtue and vice: But this moral sense is still the same thing, is the very nature and make of the mind; it is intelligence or reason itself, considered as capable of discerning, discoursing, or judging about moral subjects. And it contains in it these plain and general principles of morality, not explicitly as propositions, but only as native principles, by which it judges, and cannot but judge virtue to be fit, and vice unfit for intelligent and social creatures which God has made.

As for the word "moral sense," if it be taken to mean any thing more, that is, a sort of pathetic instinct, or disposition toward goodness, I think even this may be allowed so far, that in human nature there are some few instances of it in most persons, which appear chiefly in the workings of benevolence, and compassion in us towards sensible creatures, with some inward aversions to cruelty, and perhaps also some sort of natural reverence toward the almighty Power, whom we call God, when we come to know him. These things are some ruinous remains of that goodness, virtue, or piety, which was natural to innocent man, and are partly wrought, perhaps, into his animal nature, as well as in his soul: These instincts are certain relics of a spur to duty, and a bridle to restrain from vice, and many times become an auxiliary or ready help to the practice of virtue: But it is still reason exercising itself, and judging of the fitness and unfitness of things, by and according to these native and essential principles of reasoning which I have spoken of, that is the only rule or test of what is vice, and what is virtue, so far as the light of nature can certainly discover it; for if it should be left to mere instinct to be a general test or rule to judge of vice and virtue, without the superintendency of reason, or the final determination of the fitness and unfitness of things thereby, the concerns of morality and religion would be left at a very great uncertainty. This has been well argued and determined by an excellent writer on the *Foundations of Moral Goodness*, in a small pamphlet, 1728.

Now I do not think any of Mr. Locke's arguments against innate ideas or propositions, have force enough in them to disprove the account I have here given of the mind's judging of natural and moral truths by such sort of native principles. Nor do I imagine Mr. Locke himself would oppose this account: For he owns that there are such things as innate principles, see Chapter III. Section 3. He calls the desire of happiness and the aversion to misery, that is in all men, innate practical principles, and seems to prove them such, because they continue constantly to operate and influence all our actions; and adds, "That if we had any innate truths in the mind, we should always feel them influencing our knowledge."

And I beg leave to add, by way of reply, And so we do always feel these principles, which I have spoken of, influencing our judgment whensoever we judge; therefore, according to his own argument, they are in some sort innate, or wrought in us by nature, though, as I have often said, not in the form of propositions. These are the springs of our judgment on natural and moral subjects: And if any should ask why I judge so or so, even in self-evident speculative principles, or why I decide a case thus or thus in moral inquiries, which are equally evident; I answer, because it is the make of my mind, it is its very constitution, and it cannot judge otherwise: And in particular propositions, whether speculative or practical, the mind is influenced to assent or dissent by these innate principles, though without express reflection on them. Now these principles influence the mind in the same manner, though not as strongly in all things, as the desire of happiness or aversion to misery, which are allowed to be innate practical principles. After all, it must be confessed with lamentations, to the shame and reproach of human nature, that though these moral principles of judgment in the mind of man, if they were well improved, would lead us in the most common cases to discern and judge what is our duty, and what is sin; yet the prejudices of evil education, customs of iniquity, worldly interest, our sensual appetites, and many other evil influences, have so

perverted and abused this principle of reason in the mind of man, that now-a-days the mind often goes astray from the truth; and, instead of directing us to virtue, hath sometimes been led into gross abominations. The eye of the understanding is strangely blinded, and the judgment strangely perverted, by the fall of man: We are led to false judgments of things by the corruptions of our minds, by the unhappy influence that present sensible things have over our whole nature, and the empire which appetite and evil passions have gotten over our superior faculties. Blessed be God for Scripture and the Gospel, wherein there is a plain revelation made of our duty to God and man; wherein the method of divine grace and salvation is set before us; and whereby, even in this world, we are sensibly relieved from the darkness and error, the mistakes and miseries, which are the effects of our fall, and shall be raised to perfect deliverance, to light, truth, and happiness, in the other world, if we sincerely comply with the proposals of grace and peace.

ESSAY V.

AN INQUIRY WHETHER THE SOUL THINKS ALWAYS.

SECTION I.

CONSIDERATIONS TOWARD THE PROOF OF IT.

WHEN this great author, Mr. Locke, had proved that we are not born with actual ideas and propositions in our mind, he comes, Book II. Chap. I. to inquire whence we obtain our ideas: And he wisely and evidently derives them originally from these two fruitful and general springs, *viz.* sensation and reflection. External objects furnish the mind with the ideas of sensible things by sensation; and the mind or soul itself, by reflection on itself, furnishes the understanding with ideas of its own powers and operations: But still let the power which the soul has of abstracting one idea from another be allowed to be the fountain of our abstract and general ideas, *i. e.* the immediate cause of them.

Then he proceeds to inquire whether the soul thinks always, and he will by no means allow the soul to be always thinking. I have no mind to enter into a full debate of this matter, yet in a few words I would take leave to mention a reason or two, why I am rather inclined to believe the soul always thinks

But first, I suppose it to be granted by the persons whom I dispute with, that body cannot think, or that the soul is not matter: For as the very nature of matter or body is solid extension, so I can have no possible conception what extension or solidity can do towards thinking, judging, reasoning, wishing, willing, &c. The ideas are so entirely different, that they seem to be things as utterly distinct as any two things we can name or mention; not heaven and earth are so different from each other, as thought and matter. I can no more conceive what affinity there is between solid extension and thinking, than I can conceive any affinity between green and the sound of a violin, or red and the taste of a cucumber. The ideas of a bitter colour, a blue smell, or a purple sound, are as clear ideas in my conception, and as intelligible things, as thinking body, conscious matter, judging extension, or reasoning quantity: But this point, *viz.* that matter cannot think, has been proved so largely by many learned writers, particularly by Dr. Clarke, Dr. Bentley, Mr. Grove, and Mr. Ditton, that I say no more on this head.

Now to propose my argument for the soul's perpetual thinking. Since the soul is not matter or solid extension, if the soul ceases to think, what is it of the soul that then remains existing? I confess, I have no idea of any thing that remains. It is not solid extension, for that is body, or matter, and that is already excluded by concession. It

is not empty or unsolid extension, for that is pure space, which in my esteem is mere nothing, or at best an abstract idea of the mind. If you suppose a soul to be in the least degree more dense or more solid than empty space, that is the very idea which I have of body or matter, let it be never so tenuious or subtle; so that, as far as my ideas reach, a soul ceases to be, if it ceases to think.

Or if you should reply, that there is a power of thinking remaining; I ask, is this power of thinking the substance of the soul or not? If it be not the substance of the soul, then there is another substance, in which this power of thinking inheres. And what is that besides mere space? Or if this power of thinking be the very substance of the soul, that is the opinion I am supporting; only I suppose, that it never ceases from actual exercise: For if such a power of thinking be the substance of the soul, and yet it fall asleep, or be unconscious, I have no idea of what remains: Nor can I guess how it can awake itself again into actual thought.

I grant the soul is a power of thinking, but I cannot allow that it is a power of not thinking, or that it has any such power belonging to it. Let any man use his utmost art and labour to cease thinking, he cannot do it. He may indeed put the animal body into such a temper, *i. e.* sleep, as to be unfit to assist the soul in such acts of memory as are suited to its incarnate state, and then the soul cannot remember its thoughts or ideas; but this is not ceasing to think.

Besides, if a soul be extended, be it never so thin and subtle an extension, it has limits, or it has not: If it has no limits, every soul is infinitely extended, or really infinite: If the soul has limits, then it has a figure or shape; for shape is nothing else but the mere limits of extension; and if it has a shape, is not this shape minuable, or may it not be maimed by losing a part?

I would fain know wherein does this bulk or substance of the soul, thus limited or figured, differ from so much mere space, if it cease to think, and be not more solid or dense than space is? And again, what influence can this extended empty figure or shape have upon our thinking, any more than solid matter has? If solid extension or matter cannot think, as several modern philosophers have undertaken to prove, how can unsolid extension be capable of thinking? If any extension could think, I do not see how solidity could hinder its thinking. Perhaps the strongest arguments against the power of matter to think arise from the extension of matter, *viz.* that it hath parts exterior to one another; now this belongs to all extension, whether solid or unsolid; and therefore I cannot but wonder a little at those gentlemen who pretend to prove strongly that matter cannot think, and yet allow a soul to be extended, *i. e.* allow unsolid extension to have a thinking power. Such sort of thonghts as these, with some others, have inclined me rather to suppose the nature and essence of the soul to consist in thinking.

I own, this sort of doctrine concerning the soul is not only out of the way of vulgar opinion, but it is now also in a great measure banished from the schools and sentiments of learned men, since the Cartesian philosophy lost its ground in the world. Now though I never was, nor could persuade myself to be a disciple of Des Cartes in his doctrine of the nature of matter, or of *vacuum*, or of *plenum*, &c. and I have many years ago given up his opinions as to the chief phænomena of the corporeal world, yet I have never seen sufficient ground to abandon all his scheme of sentiments of the nature

of mind or spirit, because I could not find a better in the room of it, that should be more free from objections and difficulties.

The large and powerful influence that the name and authority of Mr. Locke has in the world, has carried away multitudes into the supposition that extension or expansion, as well as duration, are the properties of all beings whatsoever; and that therefore spirits, as well as bodies, are expanded or extended, which are but two words for the same idea; though it must be owned, Mr. Locke himself is so cautious, that I think he doth not any where positively assert it, not even in Book II. Chap. XV. Sect. 11, where he thinks it is "near as hard to conceive any real being without expansion as without duration."

SECTION II.

OF DREAMS, WHY NOT REMEMBERED.

But my design, in this place, being chiefly to take notice of the sentiments of this great philosopher, I shall proceed to answer the chief objections which he raises against those who suppose that "the soul always thinks."

His grand argument is that "the soul sleeps as well as the body, and has no thought when it has no dream:" Now there are some persons (says he) who never dream, and others that sleep sometimes for several hours without dreaming; therefore it is plain to him, that all this while the soul has been, or existed, without thinking.

Mr. Locke's chief objection against the soul's thinking in sleep, may be answered by an explication of what we mean by dreams, of which dreams the body by the animal spirits, whatever they be, is the occasion, and of which the soul is conscious.

Note, By *animal spirits* I mean those subtle corpuscles, whatsoever they are, whereby such traces or impressions are formed or revived on the brain, which correspond to our sensations or ideas, and which are usually the occasion of them.

First then, There are some impressions made upon the brain by the animal spirits, which are so soft and gentle, that there are no traces, no footstep of any such motions left upon the brain: Yet the soul might be just slightly conscious of them at that moment, and form correspondent ideas, though both the traces and the ideas vanish almost as fast as they are formed. These might be called dreams; but they being all forgotten, as though they had not been, this is not usually called dreaming.

Secondly, There are some impressions which do, more strongly than the former, affect the brain, and occasion ideas in the soul, and yet do not with an over-vigourous tide of impressions delude and confound one another; this is usually called *dreaming sleep*, and these dreams we remember and can relate; because the soul was strongly and distinctly conscious of them through their strong distinct traces on the brain which were then made, and in a great measure remain.

Thirdly, There are some impressions, which by a too impetuous flux, and too violent a throng of animal spirits crowding through the pores and passages of the brain, altogether mingle, confound, and destroy the perpetual traces which are made; hereby the thoughts or ideas are all confounded and mutually destroy one another, so that we are rendered incapable of recollecting them.

The first of these is like a soft touch of a seal upon melted wax, which scarce makes any image, or, at least, such as is lost again as soon as made, by the mere softness of the wax itself not retaining the impression.

The second of these is like deep and distinct impressions of the seal upon wax, yet not so immoderate either in violence or number as to confound and destroy one another; therefore they remain and we remember them.

The third is like a multitude of violent impressions on the wax, which perpetually mingle and confound one another, and leave no perfect image of any thing.

Thus the faint impressions of the first kind have much the same effect as the excessive numbers and violence of the third kind, *i. e.* they leave no distinct traces or memorials.

The first is our common and most refreshing sleep, which is usually called *sleep without dreaming;* and very much resembles what is often called *brown study*, while we are awake; that is, when after several minutes of musing thoughtfulness, if we are spoken to, or roused out of it on a sudden, we can scarce recollect one thought past, or, at least, only the very last thought we had; because the traces on the brain, that excited those flighty and passing thoughts, were very faint and superficial. They produce but feeble and indistinct images, like the sight of a landscape in the twilight, which soon vanishes, because the impressions were so feeble.

The second more resembles our common wakeful thoughts and actions of life, of which we can recollect many, at least, a little after we have finished them: And these are the dreams which we more distinctly remember in the morning. The images are such as when we see a prospect in common daylight, and which abide on the memory.

The third is like the deliriums of a fever, or the strong and wild imaginations of a frenzy, when either some violent impressions in an endless varicty of figures and traces crowd upon the brain, and are imposed upon the mind, and so far confound one another, that before such distempered persons can give an answer to any question asked them, they have twenty other images which confound the ideas of that question; and therefore the answer is absurd and nothing to the purpose: Now in this kind of dreams all the scenes quickly vanish by mutual destruction of each other. These are like millions of objects seen at once in a dazzling sun-shine, all indistinct and very confused.

In the first, when we awake we think we have not dreamed at all; just as when a man falls into a swoon, the faint and irregular motions of the animal spirits, together with the languid state of the brain at that time, permit not any one trace to be strong enough to produce any distinct idea in the mind; and when we awake out of a swoon, we conclude we had no thought or perception all the while. Just thus it is when we fall asleep at night, when we awake out of it, forgetful of what has passed, and when we conclude we have not thought at all.

In the second, when we awake we remember both what we did dream, and what the dream was, either more or less. And these dreams look most like the thoughts and actions of common life, for in these our reason has some little power, though not its complete government.

In the third, we remember, perhaps, that we did dream, but we can seldom recollect what we dreamed of. Often have I awoke from a dream, wherein a multitude of scenes has been impressed on the mind for an hour or two together, yet with utmost labour I could not recollect enough to fill up one minute, but only short broken hints of the

dreaming scene, which very hints have also in a little time vanished; for the images and ideas being joined without any conduct of reason, but by mechanical and more vehement motions of the brain and spirits, over-ruled the reasoning powers, and cannot be remembered by the intelligent mind; and the images themselves, or traces of the brain, are shattered, confounded, and lost by the sudden hurry and vast diversity of motions of the spirits, when upon waking they fly to the limbs and organs of sense, to perform the wakeful functions of nature.

SECTION III.

MR. LOCKE'S OBJECTIONS ANSWERED.

From what is said in the foregoing pages, the objections of Mr. Locke are easily answered; I shall set the chief of them in order here from Book II. Chap. I.

I. Mr. Locke supposes, Sect. 11, 12, that if the soul thinks while the body is sleeping, then it has its own concerns, pleasures, pains, apart from the body, and Socrates asleep and awake, are two distinct persons.

To this I answer, 1. That it is still the same person, for both the soul and body of Socrates are employed in these ideas, and that whether sleeping or waking. The ideas of his dreams and of his waking thoughts, though they both exist in the mind, yet both of them may be occasioned by the motions of his blood and spirits, and they are the acts or effects of the soul and body united, *i. e.* of both the constituent parts of Socrates.

Or, 2. If it were not so, and if the soul alone were employed in sleep, yet Mr. Locke's objection might be answered, by shewing that the actions of life, which belong only to the body as their proper principle, or only to the soul, are generally attributed to the whole man; it is the soul of Socrates that philosophised, and his body wore a gown, and yet we say it is the same person, it is Socrates did them both: So that there is no manner of reason to suppose Socrates asleep to be a distinct person from Socrates when he is awake, though the soul alone were engaged in thinking while he was asleep, without any operations of the brain.

II. Mr. Locke, Sect. 13, 14, 18, 19, supposes nobody can be convinced that they have been thinking for four hours together, and not know it, &c.

But, it plainly appears by the foregoing pages, that we may know or be conscious of sleeping thoughts at that moment, when they arise, and not retain them the next moment; so that the forgetfulness of our dreams never so soon is no proof that we did not dream, or had no consciousness of thinking in sleep.

III. Sect. 16, Mr. Locke would insinuate, that if the soul thinks while the body is asleep and inactive, those thoughts should be more purely the soul's own operations, and consequently more rational.

But it appears from what has been said, that the sleeping thoughts of a man being the effects of the various and ungoverned rovings of the animal spirits in the brain, imposing images on the soul, are not more regular or rational than those of a waking man, but far less; and therefore they are less worth our remembrance: And it is no

inconvenience to us, nor dishonour to our nature, that we are so made as to forget such roving and irregular exercises so easily and so soon.

IV. Another objection of Mr. Locke's is this: Sect. 15, that it is not agreeable to the wisdom of our Creator to make so admirable a faculty as the power of thinking to be so idly and uselessly employed all our sleeping hours, *i. e.* at least one quarter of our time, as not to be able to recollect, to treasure up, or use any of those thoughts for our own or others' advantage.

To this it is answered, First, That there are but few, even of our waking thoughts, which most men can recollect for particular uses of life, in comparison of those multitudes and millions which vanish and are for ever lost as soon as they are formed; yet this is not esteemed to reflect upon the wisdom of our Creator, who, at least in this present state, has thus constituted us. Let a man who has been awake seventeen hours, or a whole day, try in the eighteenth to recollect what he can of what has passed in his mind; and he shall hardly be able to fill up one hour with such recollected thoughts from which he can draw any proper inferences, experiences, or observations, for the use of life; and it may be as well inferred that we have not thought ten hours of that seventeen, as that we did not think the foregoing night in our sleep, merely upon this supposition that God would not make us such creatures as to think so many hours to so little purpose.

2. Why may not a thinking being be suffered to think some hours every night to little purpose, as well as to exist without thinking, *i. e.* to no purpose at all? Useless ideas are at least as good as no ideas; and a soul thinking idly is as good as a soul sleeping.

3. What if we should say, that as the irregular and exorbitant power of sense and imagination, and its ungovernableness by reason when we are awake in many instances, is owing to our fallen state, so our unrecollected and useless dreams may possibly be ascribed in some measure to the same cause? Perhaps innocent man could manage his sleeping ideas better by reason, and make them some way serviceable to his wakeful actions.

Or we may borrow from Mr. Lee a fourth answer, *viz.*

4. There seems to be a constant sense of pleasure in sound sleep, which appears by a reluctancy to be disturbed in that pleasure, and strong tendencies to re-enjoy it when we are suddenly awakened; this is at least as demonstrable as that we have no consciousness at all.

And if it be so, then, 1. Here is something we are conscious of when sleeping; and, 2. It is not unworthy the wise Contriver of nature to bestow an innocent pleasure on the act of sleeping, which himself has made necessary to preserve life, and improve the comforts of it.

V. Another objection of Mr. Locke, against the constancy of thinking in the soul of man, is his supposition that the greatest part of the time of infants, both before and after their birth, is spent without thinking, and yet it is not supposed they are without a soul. See Section 21.

I answer, as for the time before the birth, it is a great doubt with me whether the rational mind be united so soon as most people imagine, since there is no need of it to give or preserve the mere animal life. What if the rational soul be not united

to the body till the birth, I see no great inconvenience in it. But, be it when it will, it is most reasonable to believe that infants have multitudes of their most early ideas, if not all, from sensation: Before, at, and after the soul's formation and union to the body, it is natural to suppose that there are numberless impressions made on the soft and fluid brain; and why should not these convey sensations of ease or uneasiness, pleasure or pain, to the soul, as soon as it is united, perhaps according to the supply or defect of proper or improper nourishment, &c.

And that it is also affected with various sensations from the brain of the mother, if the soul be united before the birth, as well as from the various motions of its own and its mother's body, cannot be reasonably doubted, though the manner of the communication is beyond our skill to trace. If there be any impressions made on the nerves, and conveyed to the brain of the infant, which are fit to excite sensations, and the soul be then united, I cannot see why those sensations should not arise in the soul of the infant. If they be strong enough to mark the infant's body in a very sensible manner, as is generally agreed, surely they are strong enough to excite ideas.

After its birth, it is still imposed upon by the animal spirits in the brain, with new sensations and imaginations; but the only reason why we see so little evidence of thinking in infants, is not only for want of speech, or signs to manifest thought, but because their experience is so small, their judgment so weak, and the memory so short and imperfect, by reason of the exceeding softness of the brain, which can hardly retain any traces: Nor can the soul in any rational manner connect many of its ideas; which, for the most part, mutually confound one another, and suffer it to have but very few clear and distinct perceptions. Now these ideas being all confused, are quickly lost, and vanish. As the brain grows harder, and more capable of retaining traces, so the memory is confirmed; whence experience arises, judgment is strengthened and taught to act, and the efforts of a thinking and a reasoning nature appear.

From this I infer, and agree herein with Mr. Locke, though not upon the same grounds and reasons, that the soul of infants hath very few, or scarce any ideas refined or intellectual, or which come by reflection; not for that it does not think, but because its thoughts are still employed and imposed upon by the brain in sensations, as the brain is employed continually by crowding impressions from the objects of sense and feeling from within or without.

Thus I have endeavoured to answer the chief objections of this great writer, against the constant consciousness of the soul. And indeed, so far as my ideas reach, or my reasoning powers will help me, constant or perpetual cogitation seems to belong to the very nature, essence, and substance of a spirit, and that when it ceases to think it ceases to be. And herein it bears a very near resemblance to God, and is the fairest image of its Maker, whose very being admits of no sleep nor quiescence, but is all conscious activity.

COROLLARIES.

1. Hence it will follow, that the soul is in its own nature immortal; for nothing but the power which hath given it this active life and being can destroy it. It is entirely out of the reach of all the material world to hurt it: It cannot lay aside its own thinking; it cannot put itself out of being: Nor can we conceive how any other spirit can make it cease to act, *i. e.* cease to be. Such an active being as a spirit cannot be destroyed but by annihilation; and surely God, whose right and prerogative it is to create, or give being to a creature, hath not put it into the power of any creature to annihilate his works, or take away their being.

2. Hence it will follow also, that when the human body dies, the soul exists and continues to think and act in a separate state; and when it is freed from all the avocation of sensations and sensible things, it will live more entirely in the reflection on its own operations, and will commence a state of happines or misery, according to its own former conduct; either rejoicing in the testimony of a good conscience, or under inward anguish and bitter self-reproaches from the consciousness of its own guilt.

ESSAY VI.

OF THE POWER OF SPIRITS TO MOVE BODIES, OF THEIR BEING IN A PLACE, AND REMOVING FROM IT.

WHEN the ingenious director of modern philosophy treats on this subject, in his *Essay of Human Understanding*, Book II. Chapter XXIII. Section 18, 19, 20, he uses the word *motivity* to signify a power to move bodies, and by *mobility* he means the power of a being to change its own place: And makes both these to be properties belonging to spirits: But let us consider a little, and inquire whether either of them are the proper native powers of a spirit, or a thinking being?

SECTION I.

OF THE POWER OF A SPIRIT TO MOVE MATTER.

THAT spirits do continually put bodies into motion, is evident from the constant experience of our own souls moving our limbs, and the various parts of the body, which are subjected to voluntary motion: And that angels have many a time excited motion in several parts of the corporeal world, is manifest to those who believe the Scripture. It is also clear, beyond all dispute, that God, the infinite and almighty Spirit, hath created the material universe, and has put the several parts of it into motion, as he pleases. But the question is, Whether any created spirit hath any native or innate power in itself to move any part of matter? Whether this power be essential, and belong to its nature? Whether its thought or will can effect any change whatsoever in material beings? Or, whether the world of bodies and the world of minds are not so entirely different and separate in their whole nature, substance, and special properties, that they cannot possibly have any communication with each other, except by a particular appointment and commission from God their common Creator and Sovereign?

In the Third Essay, which treats of the *Original of our Perceptions and Ideas*, we have found, that neither the motions which are raised within a human body, nor the impressions which are made on the organs of sense, or on the brain, by outward sensible objects, are of themselves and in their own nature sufficient to raise any ideas or sensations in a spirit: But that all the whole train of sensations and corporeal ideas, which belong to human nature, are originally owing to divine appointment, uniting one particular spirit to one particular animal body, according to certain laws of his own prescription. And, perhaps, a few more considerations may incline us to believe, that all the native powers of a spirit are not sufficient in themselves to move any part of matter whatsoever, without the same divine appointment.

Consideration I. If spirit be entirely void of all solidity, that is, if a spirit be not matter, it is hard to conceive how it should originally, or in its own nature, have a power of itself to move matter. It cannot do it by impulse; for there can be no contact, whether immediate or mediate. Nor hath it originally or naturally in itself a power to move bodies by volition; for there is no natural connection between my willing a stone to move, and its motion: I may will it ten thousand times, and it lies quiescent still: Nay, though it be but a feather or a grain of dust, I cannot conceive how my own volition, or even the strongest volition of an angel, should excite motion in it, unless he has a particular commission from the almighty Spirit: And if it be so, thence it will follow, that the motion of the stone or feather, which is owing to such a divine commission, depends not so strictly and properly on any native essential power or influence of the angel's own volition, but rather on the divine volition, as the prime or efficacious cause.

And this perhaps is the true reason why our animal spirits, nerves, muscles, and limbs are moved at the command of our thoughts or will, *viz.* because God the Creator has efficaciously decreed or willed from the beginning, and appointed it now as a law of nature, that such a particular machine of matter or flesh, or any of the limbs of it, should move when such a particular spirit willed it: And if we add here, that God has also appointed that this spirit should have such special ideas or consciousnesses according to such peculiar motions or impressions on this animal body, we have the chief part, if not the whole union between soul and body described, as I have shewn in a foregoing Essay.

Consideration II. That a spirit cannot of itself originally move any part of matter, will appear more probable, if we inquire of our opponents, what quantity of matter, or what particular parts of matter, any spirit can be supposed to move. Surely a created spirit of itself, and by its own essential or native powers, cannot move all matter, or the whole material world; that would put the universe of bodies into the power of every single spirit, which is very absurd, and contrary to all experience and reason.

If its power of motion be confined to a limited quantity of matter, what is it that limits this quantity? It cannot be the dimensions or shape of the soul; for a soul is not supposed to have any shape, dimensions, or magnitude: Or if it had, I have shewn already, and shall shew further, that this cannot give any power to move matter, because these dimensions have no solidity, and cannot touch or impel a body. What is it then but the will of God, that determines what quantity of matter every spirit shall have power to move? And this is the very point which we are proving.

Well; but let us imagine, that a common human soul had a native power to move some quantity, suppose six feet of matter indefinitely; yet till it be united particularly by the will of God to a certain individual body, this individual quantity of matter which is moveable by it, is not particularly determined: Then every spirit has the liberty of a wide range indeed, and may move indifferently six feet of matter any where through the world, or what six feet of matter it pleases; it may rove from place to place through the earth, and by moving so much matter successively may cause strange alterations in the material system, and distribute blessings or mischiefs through the universe.

Again, Is it reasonable for us to suppose, that any spirit, as Adam's for instance, should be essentially, naturally, and of itself able to move any six feet of matter in the universe, where it pleases; and yet that it should, from the very moment of its existence,

be confined and restrained to move only the body of Adam? And that as soon as it is created and come into being, it should be cut off from its own proper essential power and liberty of moving any thing indefinitely of six square feet, and be limited only to move that very six feet of flesh and blood? Can we suppose the spirit of man, even innocent man, in the glory of his creation-state, should be formed in such bondage, and brought into being under such a narrow restraint of its own natural powers? Was man, who was made after the image of God, created in a state of such imprisonment, with his native faculties so far cramped and confined?

Or if we should so far consent, that the Platonic philosophy is true, as to suppose that a spirit, which was naturally able to move any parts of matter before, is thrust down into this body of six feet, and confined to it as a prison, wherein it can move only its own house, as a snail does; then a dismission from the body would surely restore it to its native power of moving six feet of matter any where: And why then might it not, of its own will and power, assume another body, or why may it not reassume its own body again, and set the muscles, blood, and juices, into all their proper vital motions? Or, if it could not do that, for want of skill in the construction of animal nature, yet why may it not put the dead body in the gross into motion, and become a ghost, with a moving carcase, and fright the world? And yet it might secure itself from the assaults of men, by raising the body into the air, when it pleases, upon the first view of danger.

Besides, would not this opinion give to a wicked spirit such a release, at the death of the body, by restoring it to its native power of moving six feet of matter, as to enable it do an unknown quantity of mischief in the world? How many spirits go out of the body full of rage and revenge, and what murders would they commit?

A good spirit, indeed, when released from the body, would have the same liberty and range to do extensive good offices to men: But what a theatre of contest and combat would this habitable world be, between the pious and the wicked spirits, according to their different and contrary inclinations and designs of good and evil, if spirits of themselves could move, indefinitely, six feet, or even but six inches of solid matter?

Again, if a good spirit, departed from the body, had power to move any small portions of matter indefinitely, would not its reunion to one particular body, at the resurrection, be a sore and unhappy retrenchment of its native liberty, and a confinement to a prison again? And is this sort of philosophy suited to the blessed idea which the Scripture gives us of the resurrection of good men? Is not the resurrection of the body designed for their greater advantage and happiness? And is it not more reasonable to believe that it shall render them capable of more extensive service, by enabling them to have some communications with the material world again, from which they had been cut off by the death of the body?

Upon the whole, therefore, is it not far more agreeable to the rules of reason and religion, to suppose that a spirit can, of itself, move no part of matter, nor hath any power over it, but by the particular appointment of God? And doth not this better account for the first union of each particular spirit to its own body, as a part of the providential government of the world, by the will of God? Doth it not also better adjust the powers of departed spirits, by reducing them to their native impotence of moving matter? And give a better representation of the resurrection and the reunion of each spirit to its own body?

Consideration III. The argument will still grow upon us, and carry further force in it to prove that a spirit has not, in itself, a native power to move matter, when we consider how exceedingly limited is the power that a human spirit has over its own body to which it is united; and thence it will appear, that this power, with its special limitations, was given it merely by special commission from God himself. This spirit, by all its volitions, can move nothing but those particular parts of the body which God has subjected to voluntary motion, and for which proper muscles are provided, together with the nervous powers which are necessary to move those muscular parts. It cannot make the pulse of the heart, which is a great muscle, beat quicker or slower: It cannot accelerate the motion of any of the juices, *viz.* blood, or lymph, &c. in any of the containing vessels, it cannot alter the shape or situation of any atoms, of which the flesh, blood, and bones are composed, by an immediate act of the will upon them; nor can it move any member, except only in that way of muscular motion, which God has appointed in the engine of the human body.

In this view of things there are ten thousand times more motions, of which the several parts and particles of the human body are capable, than those few which the soul has any immediate power to produce. Now if the soul had an innate or native power to move matter, might it not choose which part of its own body it would move, and in what manner it would move it? If it must be confined to one body, yet how comes it to be so wretchedly restrained from moving the smaller parts of nature, and from rectifying any of the disorders of the solids or fluids in that body by an act of its will? Why is it so poorly limited to a few grosser motions of the members? I confess, in the main, these grosser motions serve the common purposes of animal life in this world; but this cannot preserve the body in a state of health, nor secure its ease and activity: What! could a spirit move any matter indefinitely before union, and can it not move any parts of that matter, to which it is particularly united? Can it by its native power move the whole bulk of the animal body, or the larger parts of it, and yet not put the minute parts of it in motion? Doth not this confinement and limitation of its power sufficiently shew whence all this power comes, and that it is not essential to its nature, but all owing to the special ordination and will of God, in uniting such a body to such a spirit, according to certain rules of his own prescribing?

If we suppose a spirit to have no power of itself to move an atom of matter, except by particular divine commission; then it is easy to conceive that God, in great wisdom and goodness, when he united the human mind to the body, has given it a commission to move such parts as are fitted, in the main, to serve the uses of animal life, and no more. In this case, it is a bounty and benefit to have the government over some part of the material creation; but in the other case it is a restraint, and cutting short of natural power: And if that were true, then we might infer with justice that gross absurdity, *viz.* that if a soul, in its own nature, hath power to move matter indefinitely, but by union it is restrained, then a spirit not united to a body would have power to move all the parts of that same body more universally than the spirit which is united to it; and that consequently *Milo*'s spirit, when his body is dead, and itself disunited from it, can move and change those very parts and atoms of it, which it could not move or change, when the body was living; and if it had skill enough to know which parts to move, it might restore the body of *Milo* to motion and life again, as was intimated before.

Consideration IV. Another argument, to prove that spirits have no essential or native power to move matter, is this, that the evil angels, who are full of malice, wrath, and envy, would employ their powers in wild destruction among men. Devils are supposed to have residence among mankind, to tempt them to sin: But they would not content themselves with the mere temptation of souls, but would be always making wretched mischief in this material world, and overspreading it with calamities and desolations, with plagues and fire, with earthquakes, and misery, and death, if they had an innate and natural power to move bodies. One foot or two of solid matter, divided by an evil angel into millions of particles, and shaped and moved as he pleased, perhaps, would form pestilences enough to give disease and death to millions of men, would taint and corrupt the air through many regions, and kill a great part of the animal world. How small and subtle are the particles of matter which the sting of a wasp infuses into the body; the biting of the spider, called tarantula; or the sharp tooth of a viper? And yet what dismal effects have been sometimes produced in the body of man thereby? And surely evil angels, by their long acquaintance with our world, know these secrets in nature: And what horrible tortures, what lingering or sudden deaths might they inject into the human race, by forming such poisonous atoms, and dispersing them among mankind?

But, on the contrary, we find that a legion of devils could not enter into a herd of swine, nor drown them, till the Son of God gave commission; *Matt.* viii. 31, 32. And I think it is a much more probable way of accounting for all the mischief that is done by evil angels in the material world, to suppose that they have no natural or innate power of themselves to move matter, but as they have such and such a proportion of air or water, or other bodies, put under their power by the will of God; or as such particular men or other animals are given up to their influence by a limited commission, upon just reasons, and for special purposes in providence. Satan, the prince of the power of the air, could not raise a tempest to blow down the house where Job's children were feasting, till God gave him power and leave to do it; and you see with what limitation God lets him afflict the body of Job: Touch not his life; *Job* ii. 6; nor could the rage of that malicious spirit exceed these bounds: And doubtless his dominion in the air and the region of meteors is limited also, though he be called the prince of it.

In the same manner we may argue, how many of the present calamities and mischiefs in this lower world would the benevolence and compassion of good angels prevent, if they had power to move matter when and how they pleased? But we find in Scripture, when they do any special services in this lower world, it is God that gives them a particular commission.

Objection. Perhaps it will be said here, that God is a spirit, and he has power, even a natural and unlimited power, to move the whole universe of matter, or any particular parts of it, as he pleases; why then may not other spirits, which are formed after his natural image, and are said to be his offspring, have a native power to move matter also, in certain proportions, according to their order or rank in the spiritual world?

To this I answer, that the great God has a natural, essential, and self-sufficient power to create matter, and make it exist with all its modes of figure and motion; no wonder then that he should have a natural power to move it; but no such powers or properties of creating matter seem to belong to any created spirits, though in many

other instances they are made like himself: Though God has an unlimited influence over the worlds of matter and mind, yet created spirits may have no power in a world so foreign to their natures as this material world is. The two worlds of matter and mind are not within each other's reach or influence, till God, their common Maker, appoint it.

Besides, why may we not suppose it to be a peculiar prerogative of the great God to move all or any matter, that so the material world may be more entirely under the government of his will, and not be subjected to the capricious and malignant inclinations and volitions of any of his intelligent creatures, and that he may maintain his sovereignty in a more immediate manner over all the worlds which he has made? Is it not more proper to suppose that God has the power of commissioning such a particular spirit to move such an animal body, and to appoint what particular matter any spirit shall move, and what parts of matter shall have power to impress sensations on any particular spirit?

If spirits could move matter without his commission, why might not spirits receive impressions also from matter, without his special appointment? And if these mutual influences might be without his order, what infinite and perpetual tempest and tumult would be raised through the universe, by the everlasting and promiscuous mutual agencies of bodies and spirits upon one another, which the Creator and Governor of the world had never united by any appointment of his? One might form a scheme of immense confusion, and millions of jarring events, of Milton's war of angels in heaven renewed daily on the earth, of mountains torn up by the roots, with all their woods and forests, and whirled into the air, and of oceans raised high, and whelmed over whole nations, by the single or united force of the legions of hell? What extensive desolation and ruinous mischief would overspread the face of the whole creation, if the two different worlds of bodies and spirits had a natural and mutual agency, or power of acting upon each other? Two comets, or two planets, with all their contents, and all their inhabitants, encountering with full force in the mid-heaven, would not raise such a tremendous storm, nor spread such a scene of multiplied confusions, terrors, and devastations, as these two worlds of mind and matter, upon supposition of their natural and unlimited reciprocal agencies and influences.

SECTION II.

OF SPIRITS BEING IN A PLACE, AND REMOVING THENCE.

LET us now proceed to the next general head, *viz.* "the mobility of spirits."

As this author, Mr. Locke, has ascribed *motivity* to spirits, or a power to move body, so he has ascribed *mobility* to them also, or a power to move themselves from place to place. Now if mobility be ascribed to spirits, or a power to change their place, then it necessarily follows, that they are in a place, and have a proper relation to place. And if we will seek after, and follow clear and distinct ideas, this locality will be much the same as bodies have; for Mr. Locke himself justly ridicules the distinction between *locus* or place, as applied to bodies, and *ubiety* or whereness, which is ascribed to spirits, as it is explained by some philosophers.

It is evident that if souls have an *ubi*, as it is called, or a place in which they are so as to be included within it, or to have a real and proper situation or residence in it, they are certainly circumscribed in that *ubi*, and are limited to a certain quantity of space, and must have certain measurable distances from the bodies round about; and this, I think, is proper existence in a place; so that place or locality, and whereness or *ubiety*, as thus explained, are really the same things, if we strictly consider the ideas of them: And though I shall endeavour to give another sort of notion of the *ubiety* of spirit in this essay, yet, in this notion of it, it is the same with place.

Now if souls or spirits are properly in a place, I will prove, first, that they must be extended, they must be long, broad, and deep; and then they must be of some shape or figure, or be liable to all the inconvenience to which dimension and shape expose them.

First, If a spirit is in a place, suppose a parlour, it has a measurable distance from the north wall and from the south: If these two distances added together make not up the whole length of the parlour, then the soul is plainly extended, and its extent is equal to that defect or difference of measure. But if those two added distances do make up the whole length, then the soul is excluded, and it is not in a place: *Quod erat demonstrandum.*

Secondly, If the north and south walls of this parlour, by some mighty force, be moved uniformly towards one another, they will, at last, meet and be contiguous, or touch each other, or else the soul will hinder their touching; if it does hinder their touch, then it is solid as well as extended, and you make a body of it; if it does not hinder their touching, then it must be unsolid extension, and must penetrate the two contiguous walls, and must have one part of it penetrating one wall, suppose an inch or two, and the other the other; and thus it is extended also: Or else it must be acknowledged to be excluded from all place, which is the thing that was to be proved.

But if a soul be extended, it has dimensions, it is certainly shaped or figured; for since it is not infinite, this extension has limits on all sides: And, as has been elsewhere mentioned, the limit of all extension whatsoever is figure or shape.

But if a spirit has any shape or figure, I would ask whether it could not lose part of this shape? I am sure our ideas will allow it. Our clearest ideas must allow possible division to every extended figured being: Whether it will continue after division to be a soul and to think, or no, is another question; but what is actually a long, and broad, and deep substance, and does not fill all place, doth certainly allow one part of this substance to fill one place, and another another; and why may not the two parts of this substance be divided, and thus fill two distant places as well as two adjacent places? It is in vain to talk of its being one *continuum* and being indiscerptible, since it is plain we may conceive of any extended infinite substance as divided, and as existing in two places when divided. Surely division does not nullify either part of what was before an extended and substantial being. This may be said, indeed, but it is said not only without ideas, but contrary to them.

Again, if my spirit has any shape, it is surely commensurate and correspondent to my whole body, or to some part of it. Then I would inquire whether the soul may not be maimed by the sudden stroke of a sword or bullet, which carries off that part of the body? Or whether it contracts or shrinks up itself to avoid the wound, and thus grows

denser in that part than it was before? But such a supposition would imply a degree of solidity, and reduce it into body. In short, if its extension be any thing different from empty space, and if it has a shape, then, according to our clearest ideas, it must be divisible in its own nature, even though it should be never so nimble and watchful to avoid any corporeal weapons, or though it should be subtle enough to penetrate them; for if it be a finite figured being, it must be divisible.

Again, I would query whether or no the one whole power of cogitation be extended through the whole shape and bulk of the soul, or whether a distinct lesser power belongs to every part of it, if cogitation belong to every part of it, there are so many cogitative beings, or so many thinking powers in it, as there are parts of extension: If the whole is one cogitative power, then I would inquire, is the power of thinking as long, and broad, and deep as the whole soul is? Does the whole dimension of the soul operate in every thought, or a part only? Is the whole length of the soul engaged in the shortest and slightest thought? Or does one part of the soul perceive one part of a large object, and another another? Then a small part of the soul would perceive a small object, and every part of the soul would be a distinct conscious being. Again, If part of the soul were separated, whether the same power of cogitation would remain entire in the other part, or would this power be any way impaired or maimed*? In short, it seems to me, that those who suppose a spirit, or thinking substance, to be extended, do first conceive of the power of thinking, and then conceive of an extended being, and join these two in their minds till they think they have made them one, though the things themselves have no cognation.

Upon the whole, as it cannot be conceived how a power of thinking can have any contact with body, so neither can I conceive, in proper speech, how a being, whose nature consists in consciousness and activity, without extension or shape, can have any nearness or juxta-position to body: For if it be near a body, then it may be nearer and nearer, till at last it touches, or till the surfaces of body and spirit unite. But I can have no idea of a soul's touching a body, any more than how a thought can touch or lie near to a piece of flesh or a bone: For the very idea of a thinking power, as well as of a thought, is utterly and entirely distinct from the idea of body, as any two ideas can be; and I think Mr. Locke seems to allow it, Sect. 32, and in other places.

* These sort of questions are by no means so ridiculous and of so little weight in this argument, as some persons would pronounce them. The learned Dr. Samuel Clarke is known to favour and suppose the extension or expansion of the soul, and yet he confesses the queries about the extension and divisibility of a conscious being or spirit to have considerable difficulty in them. These are his words, as they are cited in a *Defence of his Demonstration of the Being of God*, page 43: "The only properties we certainly and indisputably know of spirits, namely, consciousness, and its modes, do prove that they must necessarily be indiscerptible beings. And as evidently as the known properties of matter prove it to be certainly a discerptible (or divisible) substance, whatever unknown properties it may be endued with; so evidently the known and confessed properties of immaterial beings prove them to be indiscerptible, whatever unknown property they likewise may be endued with. How far such indiscerptibility can be reconciled and be consistent with some kind of expansion, that is, what unknown properties are joined together with these known ones of consciousness and indiscerptibility, is another question of considerable difficulty." It is plain by this confession, that that great philosopher was much more sure the soul was conscious, indivisible, and immortal, than he was or could be that the soul was extended.

SECTION III.

THE FIRST OBJECTION AGAINST THE LOCALITY OF SPIRITS ANSWERED.

You will immediately exclaim then, and with some show of reason too, What! cannot a spirit be in a place? Is not your soul in your own body! Surely it cannot be every where, for then it would be infinite! It must therefore be somewhere, and that somewhere must be your body, because it acts upon your body; for no being can act upon any thing at a distance, according to the old maxim, *Nihil agit in distans.*

Answer. It is time, I think, that this axiom or maxim should be now exploded by men of learning, since the philosophy of Sir Isaac Newton has prevailed in the world. We find in his system, the sun and the planets, which are at prodigious distances, act upon each other by an attractive force, which is called the law of gravitation; which force is incessantly influencing all parts of matter to act upon all other parts of matter in their proportions, be they never so distant. But what is this force of attraction or gravitation, but a powerful appointment of the Creator? Now, if bodies can act upon each other, without contact or proximity of place, and that by the powerful and general volition or appointment of God, we may well allow spirits to act upon bodies, without any proximity to them, by the same divine appointment or volition.

It is granted, that the soul, though it be supposed to have its chief residence in the brain, yet moves the limbs only mediately by nerves or strings which go from the brain to those limbs which are moved; but it moves the origin or extremities of those nerves, or some spirituous parts about them, which are in the brain, immediately by its will; that is, when the soul wills to move a limb, those nerves are first moved. Now I would inquire, does it move these extremities of nerves ever the easier for being placed near them? Not at all: For the soul of a ploughman knows them not, and yet moves them as regularly and as well as a philosopher. None of our souls are conscious of these nerves, or the extremities of them, though your philosophy should place the soul never so close to them; nor does its power of motion extend to any of the atoms or fibres which compose those nerves which are so near the soul, so as to be able to replace them, if discomposed: And yet as soon as the soul wills to move the distant limbs, according to the laws of animal nature, which God has ordained, these distant limbs obey and move, the soul being ignorant whether there are any such nerves or no, though it be supposed to reside among them, or close to them. You see then, this supposed situation or residence of the soul, in any part of the body whatsoever, attains no manner of advantage towards its putting those parts of the body into motion, nor towards its better knowledge of that part where you suppose it to reside, as shall be proved immediately.

But at present I would endeavour to make this matter yet plainer concerning the soul's power, or rather impotence, to move bodies: And to that end let me put this question, *viz.* Whether a separate soul or spirit must be locally and actually spread through a whole mountain, and co-extended with it, if God gave it a commission in an immediate manner to move a mountain, since a mountain is only a heap of earthy particles, and not an organized body, and therefore is not to be moved by strings or

springs of nerves and muscles, as an animal body is? And whether the same spirit must shrink itself up to the size of a grain of wheat, if God gave it its next commission only to move so small a thing? Whether these contractions or shrinkings of the spirit would be performed by mutual penetrations of its own parts? Or rather, whether God's powerful appointment both of the mountain and the grain to be moved at the volition of the spirit, be not a sufficient philosophical account of this spirit's power to move the mountain or the grain by its volition, without proximities or contacts, diffusions or contractions.

I would inquire yet further, Whether God could not appoint my spirit, while it is united to my body, to exert a volition, which should in an immediate way move a grain of wheat placed at two yards distance from my body? Did he not give the prophets and apostles power by their volition to heal the sick by a word, and make happy changes in several sick bodies which they did not touch? And whether, if my soul had such a power immediately to move a distant grain of wheat, it must be extended through all the intermediate space between my body and that grain, that so it might be nearer to it, in order to act upon it? And if there be no necessity of this extension, or stretching so far as the grain of wheat, in order to move it, why must a soul or spirit be supposed to have any proximity to a body, in order to mvoe it by a volition?

May we not conclude, from all these considerations, that the power of a spirit to move a body, or to move several bodies distinct from each other, is not innate in the spirit itself, but rather seems to depend upon the supreme will of God, and his particular appointment or commission? And when this is done according to the common and uniform course of things which God has established in the world, it is called nature, or the law of nature; but when it is not according to this natural course of things, it is called miracle; but that all spirits moving matter have this power only by special divine appointments.

The great law of attraction or gravitation in the corporeal world, has a considerable resemblance to this doctrine of a spirit moving bodies. If one planet act upon another at a great distance by way of attraction, according to the universal and original laws of attraction, it is said to do it naturally; but if in any instance this attraction differ from the original law, it is called miracle: But both the one and the other are originally the effects of an almighty divine volition or appointment.

Note, All the queries which I have put, with regard to a spirit's moving one or more bodies, nearer or more distant, may be repeated in the same manner with regard to a spirit's consciousness or sensation of the motions of one or more bodies. I have intimated this already, but I will speak of it now a little more particularly. As I cannot conceive how proximity between spirit and body should enable it to excite any motion in that body, so neither can proximity give that mind any consciousness of that body's motions, and therefore I must impute this also to divine appointment, and to that only.

For let us consider a little. Suppose the soul to reside in the brain, or let it be diffused through the whole body, it is the same thing in my argument, it is still supposed to penetrate the part where it resides, or to be co-extended with it: But this co-extension with the body, or with any part of it, does by no means give it a consciousness of the parts which it penetrates: For if it did, then every human spirit would know precisely where it dwells, whether it resided in the whole body, or in any particular part of it. If it were diffused through the whole body, every human soul would be an exquisite

anatomist, and be conscious of all its bowels, muscles, nerves, veins, arteries, &c. and know what fibres were discomposed when any animal disorder or pain arose in the body; but this is contrary to all experience.

Again, If the soul resided locally in any particular part of the body, or of the brain, and received its consciousnesses from its co-extension with that part, the contests about the common sensory, whether it be the pineal gland, or the extreme origin of each nerve, or the whole brain, would quickly be decided by every human spirit, for it would be conscious of the place of its own residence. But this also is contrary to all experience; for the best philosophers are ignorant to this day, what is that precise part of the brain whence the soul immediately derives its notice of sensible things, *i. e.* where is the common sensory.

Yet further, it is evident, that this spirit, which is supposed to reside in the brain, because we feel ourselves think as it were in the brain, is much more conscious of other motions in distant parts of the body, than it is of the particles in the brain, which it is supposed to penetrate; it is conscious not only of shapes, motions, and magnitudes of outward bodies, by their impressions on the organs of sense, but it is also conscious of sensible qualities, colours, sounds, cold, heat, &c. though they come from far distant bodies: It is conscious of ease, appetite, pain, &c. in parts distant from the brain; it is, in short, conscious of every thing that God has thought fit to make it conscious of for the preservation and use of animal nature, and for all the purposes of this present life; and yet it is not conscious of the shape, or motion, or situation of the small fibres, or pulpous or nervous parts of the brain, where it is supposed to reside, and which it is supposed to penetrate; all which is a plain proof that it is not proximity to the body in place that gives it these sensations and this consciousness, but the sovereign will and appointment of the God of nature.

Perhaps you will ask me then, how far can this power extend, which God gives a spirit to be conscious of matter, or to move it? Can a soul be conscious of bodies a mile long? Can a single spirit remove a great mountain by volition? Can a created mind be conscious of every atom in a mountain? Where does its conscious or its motive power end? If these powers arise only from divine appointment, why may it not be conscious of every part of this globe of earth, if God appoint it? Nay, the inquiry, say you, might be enlarged; why may not the same spirit move the moon, or be conscious of the other distant planets, all at the same time, if God please?

To this I answer, That we are utterly ignorant of the limits of the power of spirits; but we know they are not infinite: Though spirits have no natural consciousness or motivity of matter, but what God gives them by special commission, yet it is possible that some may be capable of receiving more numerous, more extensive, more complicated ideas than others, and consequently may have a larger commission. Some may have a capacity of taking in, and of attending to no more than one idea at once, and some may attend to ten or ten thousand. It is said, that Julius Cæsar could write himself, and dictate to several clerks at the same time. It is possible, for ought I know, that a spirit may be united to the sun, and be conscious of every ray, and at once take cognizance of all the effects and influences of those myriads of rays on every planetary world. And it is not unlikely that the motive power may keep pace with such an extensive consciousness. Surely there may be a vast variety in the native capacities of intellectual beings, and yet none of them have communications with the material world, without the appointment

of their Maker. It is probable, that, according to their native powers of receiving a multitude of simultaneous ideas, God may employ some in a vastly larger sphere than others.

And yet also it must be observed, that it is possible the great God may employ some spirits in a wider sphere of consciousness or motivity, without being themselves and in their own nature more capacious of ideas, or more powerful; much less must we suppose them to be longer or broader than their fellows, or to have any manner of shape or dimensions at all. The soul of a dwarf may be as potent in itself as the soul of a giant, but God has given one a commission to move a larger engine of flesh than the other. Neither the intellectual capacities, nor the dimensions of souls, should be measured by the bulk or height of the animal.

SECTION IV.

OTHER OBJECTIONS ANSWERED AGAINST THE LOCALITY OF SPIRITS.

Are not spirits in some place? Do they not fill up some space? Must they not have some relation of situation to bodies, as being near or distant? It will be exceeding strange to say, My spirit is not properly or locally in my body; surely you will tell me, it must exist somewhere or nowhere: If it exists somewhere, it must either fill all space, and exist every where, or it must fill a part of space, and that is still somewhere: It must either be circumscribed in some part of my body, or be diffused through the whole of it; for if it exists nowhere, it has no existence.

Let us consider this argument in its several parts. *First*, It is granted, that spirits do not exist or reside every where, they are not infinite: And I will grant also, that they do not properly exist or reside any where, for they exist without any other relation to place, than what arises from their powers or operations on matter: They have no such relation to place as bodies have, and therefore it may be philosophically said, they exist or reside nowhere; that is, though God has given human spirits commission to act immediately on their own particular bodies, and on no other, yet they have no measurable relation to place, they have no proper nearness or distances to or from those bodies, although they act upon them by divine appointment, and receive influences from them; but properly they belong to another rank of natures, another world of beings, which require only activity and consciousness, and do not require any proper situation to be given them, any space to possess, or place to exist or reside in, though the objects on which they act, or of which they are conscious, have proper situation or place.

And if there be any sort of separate spirits which have no vehicles, as they are called, and which are not united to matter, or which have no commission from God to act upon any material being, or to be conscious of it, they are most properly nowhere, in strict philosophy; that is, they seem to stand more free from all locality or relation to place, since their powers and operations, having no material objects, give them no pretences to situation or residence in or near any body whatsoever; and as there is no part of matter which they are related to by mutual action or passion, so neither by juxta-position or contact.

But you will say, If my soul be separated from my body at London, it may know after its separation, that it is somewhere near London, that it is not in China, that it is

not in the moon, not in Jupiter, or one of his satellites; it must be conscious of its being and thinking in some place of this universe, rather than in another.

I answer, Perhaps not; for when once the laws of union are broken, the soul ceases to be conscious of the presence of body, and all properties of body, of place, motion, distance from, or proximity to any body whatsoever: For it cannot be conscious of bodies, nor proximity to them, but by the agency of those bodies upon it, and exciting sensations in it; but no bodies can act upon a separate spirit, without a new divine appointment, nor excite in it any sensation.

Yet you will reply, May not the soul be among bodies and near to them, though it be not conscious of it?

And I reply also, By no means; for whatsoever hath proximity to any body, may have a greater and greater proximity, till at last it touch, or till its surface be united to the surface of that body; but this we have proved to be utterly contrary to the nature of a spirit, *viz.* to have any shape or surface.

I come now to answer the second part of the dilemma, and that is, that if a spirit exists nowhere, it has no existence. This is a mighty cannon played upon me from the ancient artillery of axioms, *viz. Quod nullibi est non est*, that which is nowhere, has no being. But since this axiom is not evident enough to be granted, I think it can never be proved; and since it is borrowed merely from the world of sense and matter, it does not affect the doctrine of minds or spirits, which are thinking powers, and whose essence and life consists in perpetual conscious activity. This corporeal maxim can do no more execution here, than a cannon-ball would do on an army of angels: For though a body cannot be without being somewhere, yet a spirit, which is a conscious active power, may have a real existence, and yet have no proper place; that is, may reside or be situated nowhere in the sense I have explained it, *i. e.* have no proximity of situation to bodies, or fill up no supposed dimensions of space.

It is certain, that the forms of speech in all languages are drawn from our converses with corporeal and sensible things round about us, which require locality, or a proper place to exist in; and our words and phrases are not made for the world of spirits, but the world of bodies; nor can they so happily express the ideas that belong to spirits, as if we could speak of intellectual beings in their own proper language. And since our spirits in this present state are united to animal bodies, or act upon them, we borrow twenty forms of expression concerning our spirits, which originally and properly belong only to bodies; and being trained up from our infancy to this sort of language, we are ready to imagine our souls to be some thin airy sort of bodies, as the soul is pourtrayed, as I remember in Commenius's *Pictus Orbis*, which I learned at school. We suppose spirits to have a subtle sort of extension and figure, and to require a place to exist in as much as bodies. Nor is it possible, nor is it needful in our way of common discourse to alter our language, and change the form of our expressions concerning spirits, which are borrowed from corporeal things, provided when we come to philosophise more accurately about them, we do but explain them in a consistency with the nature of spirits. Let us see then whether we cannot in a philosophical manner declare what is the *ubi* or *whereness* of a spirit, and account for the common expressions of a spirit's existence in such a place, and its motion from place to place.

SECTION V.

THE UBI OR WHERENESS OF A SPIRIT.

SPIRITS, in common and familiar language, are said to be, and to have their existence or residence in, or near, those parts of matter on which they exert their immediate activity, or wheresoever they have an immediate consciousness. This is properly their ubi, or whereness. So my soul is said to be in my body, or united to this body of mine, because it is conscious of the motions or impressions made on my body, and has many sensations and imaginations by the means or occasions of this flesh and blood, and because it acts upon, or moves, this animal engine; whereas it is not conscious of the motions or impressions of other bodies, nor does it act upon them, or move them, as it does my own.

And this is the proper notion of the spirit's union to a body, *viz.* that though my soul has in its own nature, and merely of itself, no consciousness of, or power of agency upon, any particle of matter; yet the great God, the Father of spirits, has appointed my soul to be thus conscious of some motions of my body, and to have some power of agency upon it: He has given my soul this individual animal machine, this appointed sphere or station of my body, from which to receive sensations, and in which to excite motions.

Now for this reason my soul is said to move where my body moves, and to dwell where my body dwells, because its power of immediate consciousness and activity are confined to this animal body of mine. The body being the gross and visible engine, whereby all our human affairs and transactions are carried on, and the soul, the active agent, being invisible, we speak of every thing that the man does in language suited to his body rather than to his soul; men generally supposing the soul to be a kind of appendix or superadded principle to the body; whereas, in philosophical truth, the body is rather the appendix or instrument of the soul. But it is proper for us still to conform to the common language of the world in speaking of these subjects, just as the most exquisite astronomers speak of the sun-rising and sun-setting, and the motion of the sun and the fixed stars, though they know that the sun abides in the centre of the planetary world, and the fixed stars have no motion, and that the earth and the other planets are the only bodies that perform these diurnal, menstrual, and annual motions.

For this reason, the soul of man may be said to be in his brain, because it is more immediately conscious of some present sensible object, when the motions or impressions made on the outward parts of the body, or organs of sense, are conveyed to the brain by the nerves: And if this conveyance be interrupted between the extreme parts and the brain, the soul has no sensation, no consciousness of what is done to the extreme parts. We say also the soul resides in the brain, because it more immediately exerts its motive power upon some parts of the brain, or the origin of the nerves there, whensoever the soul designs to move the body; and also because, when we set ourselves to think or to remember any idea, we do as it were feel the soul employing the brain.

Now in the same sense in which we say, My soul, or my spirit, is in my body, we may

say also concerning the great God, the infinite Spirit, that he is present every where, *i. e.* he is immediately conscious of every property, figure, and motion of every part of matter in the universe, and of every thought of every created mind. His will hath an actual agency on every created being, at least so far as to maintain or support them in their nature and existence; and he has an immediate and unlimited power of acting upon every part of matter, and upon every created spirit; and therefore God is said to be omnipresent, or present with all things, even as my soul, which hath a limited consciousness of several of the motions and impressions caused in this my animal body, and a limited power of agency upon it, is said to be present with my body.

And if we extend our thoughts beyond all the real creation, into the supposed emptiness or imaginary space, we may as well assent, that the ubiety of God reaches to all the supposed infinity of empty space; that is, that his knowledge extends to all things that are, or shall be, or can be, and that he has a power of immediate agency to create what he pleases, through all the infinite void or empty nothing, or wheresoever there is nothing already created.

This immediate and universal consciousness and agency of the supreme Spirit on all things, is the omnipresence of God, and this perhaps is the only true notion of his immensity; and yet this infinite consciousness and activity of God, which are his very self, have no measurable or unmeasurable relation either to body or to space, as the parts of extension or quantity have to each other; and therefore, we say, he is in no place in strict and philosophical language, though in common speech and in the language of Scripture, which is suited to the bulk of mankind, God is said to fill all things, and to exist every where, in heaven, earth, and hell, because of his immediate consciousness of all beings, what and wheresoever they are, and his power of immediate agency upon them. This is infinite knowledge and infinite power. And, indeed, this idea of infinite power and knowledge has no manner of connection with extension or space, any more than the idea of infinite space or emptiness has with knowledge and power: They have nothing at all to do with each other as attributes of the same substance.

But now if we could suppose the very substance of the blessed God to be really long, broad, and deep, and to be actually extended through the whole universe of matter, and through all imaginary space, what advantage would be gained by it toward the aggrandizing of his own majesty, or our ideas of him? What could he do more by this supposed infinite extension of his substance, than to be immediately conscious of all things, and to have an immediate power and influence upon all, to know all possibles, and give them existence when he pleases? And this is as fully and honourably attributed to him in my way of thinking, without any of those inconveniences, and those harsh or absurd ideas and speeches which arise from attributing extension, with all its consequences, to the great and blessed God.

CONCLUSION.

But after all our best philosophemes on the nature of spirits, we must confess our great ignorance of that more glorious and noble part of the creation. We are immersed in the affairs of sense and matter, and imposed upon perpetually by the prejudices arising thence: And when we endeavour to quit ourselves of them, and to turn our backs entirely upon sensible ideas, we are in danger of wandering into darkness, and sometimes

perhaps of going beyond our clear and distinct perceptions. The best thing we can do, is, to guard against those ideas of spirits which have any gross absurdities attending them; and particularly to stand afar off from those opinions which would bear any indecent and dishonourable ideas upon God the supreme Spirit. I would assert nothing with confidence on so abstruse a subject; I would retract all the expressions that savour of too much assurance; perhaps I may be mistaken in this whole set of sentiments: I am therefore ready to renounce them all, as soon as I can find another scheme more just and more natural. And if I am forced to retain these opinions, it is only for want of better, till I retire from this world. I hope then to see as I am seen, and know as I am known; to have clearer and juster ideas of what I am and what God is; and to join with the holy millions of spirits in the heavenly world, to pay honours to my Creator-Spirit, more agreeably to the dignity of my own nature and the incomprehensible grandeurs of his majesty. *Amen.*

ESSAY VII.

THE DEPARTING SOUL.

SOME persons have been very solicitous to know how the soul goes out of the body when a good man dies; how it passes through the air and ethereal regions; and, leaving the stars behind, how it soars up to the third heaven? They are much at a loss to tell how long it is going this wondrous journey, and in what region of those upper worlds its final mansion is; especially since the new philosophy has found those regions to be so very vast, that a cannon-bullet would spend many ages in travelling to the nearest star, or from one star to another. They are yet farther puzzled to conceive whether a soul departing from any place, *v. c.* from London at noon, would find out its friend who died there the foregoing midnight, since a direct ascent would increase their distance and separation, far as the *zenith* is from the *nadir*, and they are as much puzzled to determine, whether the immense outmost space be their dwelling, or some one part of it only.

I confess, while we consider human souls united to bodies, we are wont to speak of their absence and presence, their places of residence and their removes, according to the station, place, and motion of those bodies to which they are united. This is the common language of all mankind; nor is there any sufficient reason to alter it. It is evident, and without all controversy, that bodies must necessarily have relation to place: And when angels assume corporeal vehicles, the case is the same with them as with human souls; they may therefore be said to move and fly from place to place. Gabriel *being caused to fly swiftly*, Dan. ix. 21, *touched* Daniel *in the evening*. Angels have their places of residence or removal in this respect.

There is also certainly a local heaven, where the body of our blessed Saviour is, and Enoch and Elijah, who went from this world and carried their bodies with them; and there are other saints that were the companions of their Lord's resurrection, who doubtless ascended with him into glory; *Matt.* xxvii. 52.

Whether this heaven be one certain determined palace among the planets, or near the stars; or whether it be this solar system wherein we dwell, through all parts of which they pass swift as sun-beams, and make this whole planetary world their palace; these things cannot yet be fully determined by us. I confess, I much question whether the range of human happy beings extends through all the fixed stars.

That expression of ascending *far above all heavens*, which is applied to Christ, *Eph.* iv. 10, is easily reconcilable to this scheme, though his body rose no higher than to some planet in our solar world; since his descending *into the lower parts of the earth*, in the same text, signifies no more than his going into a sepulchre, perhaps a foot or two beneath the ground. So that the exposition of those texts is not to be measured by yards or miles; but as the one expresses great abasement, so the other great exaltation, in such language as is suited to the apprehensions of the vulgar part of mankind, which all learned men acknowledge to be the common language of Scripture.

Now, concerning departed souls, if we allow them to be immediately furnished with new vehicles, so as never to have any single and separate existence in their own pure

spiritual nature, then we may talk of their rising, and moving, and residing, in all the local language that belongs to bodies: We may then trace their ascent through the aerial regions, and follow their flight through the planetary worlds, if we know where to stop and settle them in a proper place.

Nor am I so averse to this opinion as to renounce or disclaim it utterly. It is possible it may be so appointed by the blessed God, the Lord and Ruler of all the worlds of minds and bodies. I know not of any person living who is so sagacious as to have pryed into all the secrets of the invisible world, and to be able to tell us certainly how spirits live, and act, and converse there. Nor have we had any of the departed souls among men who have come back to give us an account of these affairs. There is a mysterious darkness spread over the face of the unseen regions, to hide them from mortal view: And it is wisely ordained by our Creator "that we should live in this world by faith, and not by sight." We are sure "we must shortly put off these tabernacles;" and though the spirits of good men shall be immediately invested with a holy and happy immortality, yet whether they shall be clothed or furnished with material vehicles of any kind is not so evident, and consequently what they shall have to do with place and motion is not so easy to determine.

But when we speak of the places and motions of departed souls, and yet conceive them as perfectly separate from all matter, we talk perhaps but in a mere vulgar, figurative or improper way, and in such language as our infancy and prejudice borrow from sensible objects round us; and not agreeably to the philosophical nature and reason of things; in which respect pure spirits do not seem to be capable of confinement to a place, or any proper local motion to or from it, because they have no figure, shape, nor dimensions.

All the foregoing problems and hard questions about the holy soul's passing through the airy regions, and getting up above the planets and stars, &c. are therefore easily answered, and all those difficulties removed, if we consider the soul as a pure intellectual being, a substantial thinking power, without any dimensions of length or breadth, and consequently without any proper relation to place. Then it will follow, that human spirits which were united to bodies, when they enter into a state of separation, need not have any thing to do with a real proper motion or flight, or change of places. An embodied soul, that is, a soul acting in concert with an animal body, when it becomes a separate soul, that is, a soul acting in its own pure intellectual capacity without a body, does not need properly to alter its place, but only its manner of thinking and acting, in order to be in heaven and hell, *i. e.* happy in the presence of God, or miserable in the midst of devils, acting and thinking without bodies.

In order to give us some faint idea of this matter, and to help our conceptions while they are so incumbered with corporeal and local images, let us conceive the whole intelligent creation, or all created spirits, as one set of beings, acting in different manners, and, if you please, in one open and infinite space; for we cannot utterly throw off all these kind of ideas in the present state.

Some spirits are said to be united to a body, that is, are influenced in their actions by animal bodies, and it is their business to move and manage those engines: But by the perpetual agency of animal nature upon them, the reaction upon it, and their converse with the material world by the means of that animal, they are restrained from more immediate converse with separate spirits, or even with God the infinite Spirit.

Others are free or disengaged from bodies, and these have a more immediate percep-

tion of God the infinite Spirit, and converse with each other perhaps under no confinement, or under such lesser limitations as their Creator's will and their own finite natures make necessary. They become conscious of one another's thoughts and volitions by some unknown way that God has appointed; for as an embodied spirit is conscious of the motions of that animal to which it is united by the appointment of God, as it becomes conscious of the motions of other bodies round about it by the organs of that particular animal, and as it is also conscious of the thoughts of other embodied spirits by the motions or voices of their several engines or animal bodies, so doubtless there is a way which God the Creator-Spirit has ordained, whereby created spirits, which are social beings, shall maintain society and friendly communion with other created spirits when they are in their native state, separate from material engines.

Now death is but the cessation of animal life, in that body or engine which is united to any particular spirit: That body then becomes a moveless mass, and not an animal; it is no more capable of obeying the volitions or commands of the soul, nor of communicating any external motions by the nerves to the brain, to give the soul notice of any sensible object. Thence it follows by divine appointment, that that spirit is no more conscious of what passes in that body, and no more employed in managing it, or acting upon it, or conversing with the material creation by the organs of that engine.

Being therefore unemployed and unimpressed by the corporeal world, its thoughts perhaps are more purely intellectual, or at least it has no new sensations, but its ideas are raised in another manner. It reflects upon its own temper and actions in this life; it is conscious of its virtues or its vices; it has an endless spring of peace and joy within, flowing from the sense of its wise and holy behaviour in the state of trial, or it is tormented with the bitter anguish of a self-condemning conscience in the reflection on its past crimes. This is one great part of heaven and hell.

And then with regard to God and its fellow-creatures, if we speak of them in this our incarnate state, we must be forced to use language borrowed from corporeal things, and say, This departed soul appears at once in the pure intellectual or separate world, like a native there; it stands among innumerable millions of spirits, itself a kindred spirit, gains swift acquaintance with them, grows conscious of their ideas and actions in their own way and method, which God has not yet revealed to us in this life: And above all, it has an immediate perception of God the infinite Spirit, a consciousness of his power and presence, and an intimate and delightful taste of his love, or a dreadful sense of his anger; and thus the soul feels immediately, and possesses a second part of its heaven or its hell; and all this without any local motion, or any relation to a place, or change of distance.

I might illustrate this by two similes, and especially apply them to the case of holy souls departing.

1. Suppose a torch enclosed in a cell of earth, in the midst of ten thousand thousand torches that shine at large in a spacious amphitheatre. While it is enclosed, its beams strike only on the walls of its own cell, and it has no communion with those without: But let this cell fall down at once, and the torch that moment has full communion with all those ten thousands; it shines as freely as they do, and receives and gives assistance to all of them, and joins to add glory to that illustrious place.

2. Or suppose a man born and brought up in a dark prison, in the midst of a fair and populous city; he lives there in a close confinement, perhaps he enjoys only the twin-

kling light of a lamp, with thick air, and much ignorance; though he has some distant hints and reports of the surrounding city and its affairs, yet he sees and knows nothing immediately, but what is done in his own prison, till in some happy minute the walls fall down; then he finds himself at once in a large and populous town, encompassed with a thousand blessings; with surprize he beholds the king in all his glory, and holds converse with the sprightly inhabitants; he can speak their language, and finds his nature suited to such communion; he breathes free air, stands in the open light, he shakes himself, and exults in his own liberty. Such is a soul existing in a moment in the separate world of holy and happy souls, and before a present God, when the prison walls of flesh fall to the ground.

Perhaps it will be objected here, that holy souls, when they are *absent from the body*, are encouraged to expect they shall *be present with the Lord Jesus*, and then it seems necessary they should be in the place where his body is. They hope to *be with Christ*, and behold him in the glories of his exalted human nature, when they *depart* from the flesh; 2 *Cor.* v. 8; *Phil.* i. 23. Now in all this philosophical account of the separate state of the souls of good men, there is no provision made for this part of our promised blessedness.

To this I answer, That if the souls of good men at their death be admitted to a more intimate converse with the Deity itself, and with the human soul of Christ Jesus, there is no necessity of any communication with his glorified body, till their bodies also are raised at the last day. Now the human soul of Christ, especially in its exalted state, has an extensive power to converse with pure spirits, whether angels or human souls, to impress his sacred influences of authority or love upon them, by command or consolation, and enable them to exercise and maintain mutual converse with himself. Doubtless our blessed Lord has all the freedoms, powers, and prerogatives of a pure separate spirit in his state of bodily resurrection, exaltation, and glory; and he can make the spirits of his faithful followers as happy in his own presence, as is proper for their state of separation from the body, and he can also make the souls of impenitent sinners, as well as evil angels, sensible of his resentments against their crimes. His raised and exalted body is no hindrance to his influences on unbodied spirits. If in his incarnate state and humiliation, when his body was mere flesh and blood, he had converse with good angels, and power over devils, we may well suppose, that in his exalted state of union to a glorified body, he can converse as he pleases with the world of spirits, and enable them to hold converse with himself.

After all, let it be noted, that I have only represented in this place, how far it is possible for the heaven or the hell of departed spirits to commence in this state of separation from the flesh, without a new union to any corporeal vehicle. Yet I assert nothing with certainty; I am conscious of my ignorance. Perhaps it is probable enough that there may be some vehicles of grosser or more refined matter assigned to every human spirit, when the body of flesh expires, and is no longer capable of maintaining its reciprocal communion with the spirit. What are the circumstances, what are the laws, what is the situation, and what is the language of the world of spirits, must and will be a matter of darkness and mystery to us, while we dwell in flesh and blood: We must each of us wait our appointed hour, and then shall our curiosity be better satisfied, either in a delightful, or in a dreadful manner, according to our behaviour in the present life.

ESSAY VIII.

THE RESURRECTION OF THE SAME BODY.

THERE has been a warm dispute among men of learning, and particularly between Mr. Locke and Bishop Stillingfleet, whether the same individual body which is buried shall be raised at the resurrection of the dead? Or, whether it may not be another new-made body, composed of any other atoms, and united to the same soul? Those who, with Bishop Stillingfleet, affirm the resurrection of the same body, may give such reasons as these for it:

1. It is fit and proper, that the same body, which has been a companion and instrument of the soul in duties of holiness, should arise and share with the soul in the reward of heaven; and that the same body, which has been a temptation or instrument of the soul in sin, should also rise to share the torment.

I must confess, I do not think this argument has very great weight in it; because the body alone is mere insensible matter, and can neither share in pleasure or pain. It is the soul only that has sense of pain and pleasure, and whatsoever body it is vitally united to, is still its own body, and may be the medium of pleasure or pain to it.

2. Since body and soul united constitute the man, if it be not the same body that died which is raised, then one essential part of man is lost. If it be another body, it is another man that is raised from the earth, and not the same man that died.

Besides, the soul never dies; and if the same animal body that died be not raised to life there is nothing at all raised to life: There may be another inanimate body which has life given to it indeed, but nothing is revived. Perhaps this sort of argumentation may have some weight in it.

3. Christ himself saith, John v. 28, *They that are in the graves shall come forth:* This must refer to the same body that died; for it is not the soul, nor is it any other body that was properly put into the grave, but the animal body of man which is now inanimate and dead.

4. It seems to be the design of the apostle, to shew that it is the same body which died in some respects, though not in all respects, which shall be raised again to life: 1 Cor. xv. 42, *So is the resurrection of the dead. It*, i. e. the body, *is sown in corruption, it is raised in incorruption*, &c. *It*, i. e. the body, *is sown a natural body, it is raised a spiritual body.* It is the same human body still, but with different qualities. So, *ver.* 52, 53, *The dead shall be raised incorruptible, and we shall be changed. This corruptible shall put on incorruption, this mortal shall put on immortality;* which seems to be spoken both with regard to those who shall be raised from the dead, as well as those who shall be changed at the coming of Christ. It is *this mortal* and *this corruptible*, that is, this very animal body, which was mortal and corruptible, must be raised immortal.

To this I might add, that the apostle, *Rom.* viii. 11, speaks of these very mortal bodies which we now have, and affirms they shall be quickened, &c. and *Phil.* iii. *ult.* this

body of our vileness or humiliation is to be changed, and made like to the glorious body of Christ." Surely such expressions denote the same body.

But the substance and strength of all the arguments derived from Scripture to prove the resurrection of the same body, may be found well put together in Dr. Whitby's *Preface to the First Epistle to the Corinthians.*

Those who, with Mr. Locke, make the resurrection of the same individual body needless, may allege such reasons as these:

1. It attains no valuable purpose to confine the resurrection to the same atoms of matter; for if the same soul be united to any mass of the same sort of substance, *i. e.* to any matter, there is a sufficient provision for every thing that regards the happiness or misery of the rising dead: Since the body itself, or mere matter, has no sensation; and the soul will have the same sort of sensations, whether pleasant to reward it, or painful to punish it, whatsoever other particles of matter it may be united to, as if it were united to the same particles it had in this world, and in which it obeyed or sinned.

Besides, it is worthy of our observation what Mr. Locke says on this subject: "If it should be demanded what greater congruity the soul hath to any particles of matter, which were once vitally united to it, but are now so no longer, than it hath to particles of matter to which it was never united, this would be hard to determine."

2. The apostle shews it shall be different matter from that which was laid in the grave, by the very manner of his arguing: For when he uses the simile of a "grain of wheat dying in the ground," he says, *verse* 37, 38, *Thou sowest not that body that shall be, but* thou sowest a *bare grain; and God giveth it a body* (*i. e.* another body) *as pleaseth him.* And then he goes on to shew what different sorts of bodies there are, and how different the bodies in the resurrection shall be from what were buried.

3. It is hardly possible that all the very same bodies should rise; that is, all the same atoms or particles that were buried: For when bodies turn to dust, this dust or earth grows up in vegetation, and becomes the body of grass or plants; sheep and oxen eat these plants, and other men eat the sheep and oxen; and thus the particles of one man's body may frequently become the parts of another man's body. And this is more conspicuous in the country of cannibals, where they kill and eat their slaves. How then is it possible that each human body should have its own particles?

4. There is sufficient ground to say, the same person rises again from the dead though there be not one atom of the same matter that was buried, which goes to make up the body in the resurrection; for Methuselah, when a child, and when one, two, three, four, or five hundred years old, and when he had lived nine hundred and sixty years before his death, had actually, by perspiration and attrition, &c. changed the atoms that composed his body perhaps thirty or forty times over, and yet it is the same compound substance of soul and body, the same conscious being or person still, it is Methuselah both at his birth, at five hundred years old, and at his death. Besides, if all the same atoms that ever belonged to Methuselah must be raised, what a bulky man would that be? And further, what need is there that the last dying withering particles should be raised to make Methuselah again, when any other atoms that ever belonged to him, and in which he practised virtue or vice, are as much the same Methuselah? And yet all of these cannot be crowded into his body, without making a giant of him. So that we see there is no need of the same atoms or particles to make the same person, if there be but the same

thinking mind, conscious of his actions in this life, united to a proper portion of matter. It is consciousness makes the person.

This is the force of the arguments of those who deny the necessity of having the same body raised. And I think the arguments on both sides have some real strength in them.

Now I would humbly inquire, whether all the differences of these disputants, which I have endeavoured briefly to set in their strongest light, may not be compromised in this manner:

I. It is granted that it cannot be the very same body in all the particles or atoms of it which were united to the soul in this world, that shall be raised and united to it in the resurrection:

1. Because all the atoms that ever belonged to the animal body of Methuselah, in nine hundred and sixty-nine years, would make a most bulky and disproportionate figure at the resurrection: And for the same reason all the antediluvians, who lived so many hundred years, would be raised as giants in comparison of us in later days. And on the same account also, every man at the resurrection would be so much larger than his contemporaries and neighbours, as he lived longer on earth; which is a vain and groundless conceit.

2. All the same particles, even of the body when it died and was buried, can hardly be raised again and united to the soul of any man, because several of the particles that made one man's body at the time of his death are very probably turned to grass or plants, and so become food for cattle, or other men, and are become part of the bodies of other men several times over. And thus there might be great confusion, because the self-same particles would belong to the bodies of several men.

Besides, here is one pious man, perhaps, died of a dropsy, or excessive fat and unwieldy; must he be raised in that unwieldy bulk and those extravagant dimensions? Another was worn out to a mere skeleton by consumption; must his raised body be of this slender and withered shape or size? Others, it may be, from their very birth were in some part defective, or redundant; and in these cases must not some particles be left out or added in the resurrection to form a proper body for the glorified soul? All these considerations prove that all the precise number of atoms that ever made up a man's body here on earth, or even those that belonged to it at the hour of death, are not necessary to be summoned together to form the same man at the resurrection.

II. It is also granted, that it must be in some sense the same body raised which was buried, in order to answer several expressions both of Jesus Christ and of the apostle Paul, in their discourses of the resurrection. And we may allow without any difficulty, that so many of the same particles of any man's body which were buried may go to constitute the new-raised body, as justly to denominate it the same body, and which being united to the same soul, do render the new-raised man the same man and the same person who died: For it is evident that a very few of the same atoms or particles which were laid in the grave are sufficient for this purpose, if we consider these two things:

1. It is very probable that a new-born infant, in its muscles and nerves, and especially in its bowels and bones, has some original, essential, and constituent tubes, fibres, or staminal particles, if I may so call them, which remain the same and unchanged through all the stages and changes of life in following years, how much soever the external and fleshy parts may be changed. And some philosophers maintain that the growth of the animal body is nothing but the dilatation, stretching, or spreading of these essential

staminal parts, these fibres, tubes, or membranes, by the interposition of new additional particles; which additional and accidental particles are the only things which are in perpetual flux, and always changing. And it may be added also, that perhaps these essential staminal particles are of such a nature as not to join and unite with other animal or human bodies, and become an essential constituent part of them: And therefore if mankind were all cannibals, and ate one another as well as the flesh of beasts, yet the same staminal or constituent particles cannot belong to the bodies of two or more human persons. It has been said by some philosophers that the mere membranaceous parts of an animal body, though eaten by other animals, will not easily, if at all, digest; and then they cannot be sanguified or turned into blood, nor become nutritive juices, nor form the constituent and essential parts of other animals: Now a great many of the original constituent parts of human bodies are membranaceous; for some suppose almost the whole body to be made of tubes and juices, with little interspersed fibres which are added by nutrition. And how far the bones, *i. e.* original mere osseous substances, may be indigestible also, who can tell?

Upon the whole, it seems that these essential, constituent, or staminal particles, whatsoever they be, whether osseous, or membranaceous, or of any other quality, and how many or how few soever they be, always abide the same, even when the body is greatly enlarged by the perpetual new interposition of additional nutritive particles, which are in continual flux. I say also, that it seems that these unchanging parts, whether few or many, in union with the same soul, are abundantly sufficient to denominate Methuselah the infant, and Methuselah the aged, the same person; and then also these few essential constituent particles preserved by divine providence, and raised in the formation of the new body, and united to the same soul, are sufficient to denominate Methuselah dying, and Methuselah rising, the same person still, both soul and body.

Here it may be objected indeed, that there is no need of running to such essential constituent particles of the body of a man in order to denominate him the same man at sixteen, or sixty, or six hundred years of age; for these philosophical ideas of constituent particles come not within the notice of the bulk of mankind, and yet all mankind agree to call Methuselah the same man, and his body the same body, though it be maintained by the continual succession of new particles of matter, since they are united to the same soul. This seems to be sufficient for this purpose.

This objection may be answered two ways: 1. That as these constituent and unchangeable particles of the body do not come within the notice of the bulk of mankind, so neither does the continual change and succession of new particles by perspiration and nutrition come within their notice; and therefore the bulk of mankind call it the same body, because it appears in the gross to be the same: But if you prove it is not the same by insensible alterations, I may prove it is the same by these insensible unchanging parts. In one case the alteration is insensible; and the constituent particles abide unchanged without sensible notice in the other case; and if one disputant borrows his objection from philosophical ideas, the other may borrow his solution from philosophical ideas too.

It may be answered, 2. That the language of Scripture and the reasons for the resurrection of the body, in some respects the same with that which was buried, are so strong, that I think they cannot well be answered without supposing so many particles of the

same body which was buried to be raised again, as may be sufficient upon some just principles to give it the name of the same body, and there can be no more required.

2. The similitude which the apostle uses in that discourse concerning "a grain of wheat," *verse* 37, 38, plainly teaches us, that though there should be but a very few of the same individual particles raised from the dust, and mixed with a multitude of other new particles, yet these few are sufficient to denominate it the same body, so far as the apostle's argument requires it. For it is evident that when a grain of wheat is sown into the ground, far the greatest part of the grain quickly dies and rots in the earth; and there are but a very few small particles of the same grain which compose the *germen* or bud of the new plant, and which do really grow up into, and help to form and compose, the new stalk and the ear of corn, together with the addition of a multitude of other new atoms borrowed from the earth and water.

In the same manner the apostle leads us to suppose there may be a few of the same original and essential parts of the body of a man which are buried in the grave, which are the original, the spring, and foundation of the new raised body, though there may be thousands of other new atoms mixed with them.

Now it is easy to suppose, that the power and providence of God may, according to this supposition, preserve and raise the same body at the resurrection. For if the new-raised body has but as many essential atoms of the dead body in it, as the new stalk and ear of wheat has of the grain that was sowed, it is enough: And the union of the same conscious mind or spirit makes it the same man.

I would ask leave to conclude this Essay with this short and plain remark: There are some of those who follow Mr. Locke and his way of thinking, in many of these matters, who also go a step further, and suppose the spirit, or conscious principle in man to lose all consciousness when the body dies, and that at the resurrection God shall give consciousness to the person again, or make a conscious principle to exist in the new-raised body. Now if this be the case, then it is neither the same body nor the same spirit that is raised from the dead, but a new spirit and a new body, which I think must necessarily be called *another person*, as well as Mr. Locke would call it *another man*: And I am sure such a new-made creature, consisting of another mass of matter and another conscious principle, can never be justly rewarded or punished for personal virtues and vices, good or evil actions, done in the former life by a different body and spirit, *i. e.* by another person.*

* I have not observed any distinction here between the *same man* and the *same person*, though Mr. Locke makes a great difference. Of this matter see *Essay* XII. *Section ult.*

ESSAY IX.

OF THE PRODUCTION, NOURISHMENT, AND OPERATIONS OF PLANTS AND ANIMALS.

SECTION I.

CREATURES PRODUCE THEIR OWN KIND.

WHEN I survey the works of nature with a more attentive eye, I am surprised to find with what marvellous exactness every creature draws its own picture, or propagates its own likeness, though in different manners of operation. The fox produces a living fox, the goose drops her egg, and hatches the young goose, and the tulip lets fall its seed into the earth, which ferments and swells, and labours long in the ground, till at last it brings forth a tulip.

Is it the natural sagacity of foxes that enables them to form their own image so accurately? By no means; for the goose and the flower do the like: The sprightly and the stupid, the sensible and the senseless, work this wonder with equal regularity and perfection; and the plant performs as well as the animal.

It is not possible that any of them should effect this by any peculiar rules of art and contrivance, for neither the one nor the other are at all acquainted with the composition or progress of their work. The bird is entirely ignorant of the wondrous vital ferment of her own egg, either in the formation of it, or the incubation; and the mother-plant knows as much of the parts of the young plant, as the mother-animal knows of the inward springs and movements of the young little animal. There could be no contrivance here, for not any of them had any thought or design of the final production: They were all moved, both the beast, bird, and flower, by the material and mechanical springs of their own nature, to continue their own species, but without any such intent or purpose.

Give souls to all the animal race, and make those souls as immaterial and as intelligent as you can; attribute to them what good sense you please in other affairs of their puny life; allow the brutes to be as rational and as cunning as you could wish or fancy, and to perform a thousand tricks by their own sagacity; yet in this matter those intellectual powers must all stand by as useless; the senseless vegetable has as much skill here as the animal; the goose is completely as wise as the fox or the greyhound; they draw their own portraits with as exquisite art and accuracy, and leave as perfect images behind them to perpetuate their kind.

Amazing proof, and incontestible argument of some superior wisdom! some transcendent contriving mind, some divine artificer, that made all these wondrous machines,*

* *Note,* I call them all machines here, not presuming to determine that the nature of brutes is mere machinery; but when I speak of the natural production of their bodies, I think these bodies, as well as the bodies of men, are mere engines or machines, whatsoever souls may be united to them.

and set them at work! The animal and the vegetable, in these productions, are but mere instruments under his supreme ruling power; like artless pencils in a painter's hand, to form the images that his thought had before designed: And it is that God alone, who before all worlds contrived these models of every species in his own original idea, that appoints what under-agents he will employ to copy them.

In the week of the creation, he bid the earth teem with beasts and plants; and the earth, like a common mother, brought forth the lion, the fox, and the dog, as well as the cedar and the tulip; *Gen.* i. 11, 24. He commanded the water to produce the first fish and the fowl; behold the waters grow pregnant; the trout and the dolphin break forth into life, the goose and the sparrow arise and shake their wings; *Gen.* i. 20, 21. But two common parents, earth and water, to the whole animal and vegetable world! A God needs no more. And though he was pleased to make use of the water and the earth in these first productions, yet the power and the skill were much the same as if he had made them immediately with his own hands.

Ever since that week of creative wonders, God has ordered all these creatures to fill the world with inhabitants of their own kind; and they have obeyed him in a long succession of almost six thousand years. He has granted, shall I say, a divine patent to each creature for the sole production of its own likeness, with an utter prohibition to all the rest; but still under the everlasting influence of his own supreme agency upon the moving atoms that form these plants or animals. God himself is the Creator still.

And it is evident, that he has kept a reserve of sovereignty to himself, and has displayed the ensigns of it in some important hours. Egypt was once a glorious and tremendous scene of this sovereignty: It was there that he ordered the rod of Moses, a dry and lifeless vegetable, to raise a swarm of living animals, to call up a brood of lice in millions without a parent, and to animate the dust of the ground into a noisome army. It was there he bid Aaron wave the same rod over the streams and the ponds, and the silent rod, under divine influence, could bring forth croaking legions out of the waters without end or number.

But these are his works of miracle and astonishment, when he has a mind to shew himself the sovereign and the controller of nature: Without his immediate commission not one creature can invade the province of another, nor perform any thing of this work but within its own peculiar tribe. Even MAN, the glory of this lower creation, and the wisest thing on earth, would in vain attempt to make one of these common vegetables, or these curious animated moving machines. Not all the united powers of human nature, nor a council or club of the nicest artificers, with all their enginery and skill, can form the least part of these works, can compose a fox's tail, a goose-quill, or a tulip-leaf. Nature is the art of God, and it must for ever be unrivalled by the sons of men.

Yet man can produce a man. Admirable effect, but artless cause! A poor limited inferior agent! The plant and the brute, in this matter, are his rivals, and his equals too. The human parent and the parent bird form their own images with equal skill, and are confined each to its own work. So the iron seal transfers its own figure to the clay, with as much exactness and curiosity as the golden one: Both can transfer only their own figure.

This appears to me a glorious instance wherein the wisdom and power of God

maintain their own supremacy, and triumph over all the boasted reason and intellectual skill of men; that the wisest son of Adam, in this noblest work of nature, can do no more than a flower or a fly; and if he would go out of his own species and the appointed order of things, he is not able to make a fly, nor a flower; no, not a worm, nor a simple bulrush. In those productions wherein mankind are merely the instruments of the God of nature, their work is vital and divine; but, if they would set up for prime artificers they can do nothing: A dead statue, a painted shadow on a canvass, or perhaps a little brazen clockwork is the supreme pride of their art, their highest excellence and perfection.

Let the atheist then exert his utmost stretch of understanding, let him try the force of all his mechanical powers, to compose the wing of a butterfly, or the meanest feather of a sparrow: Let him labour, and sweat, and faint, and acknowledge his own weakness: Then let him turn his eye, and look at those wondrous composures, his son or his little daughter: And when their infant tongues shall inquire of him, and say, Father, who made us? let him not dare assume the honour of that work to himself, but teach the young creatures that there is a God, and fall down on his face, and repent and worship.

It was God who said at first, *Let the earth bring forth grass*, and *the herb yielding seed—after his kind*—and *the living creature after his kind;* and when this was done, then with a creating voice he bid those herbs and those living creatures *be fruitful and multiply*, to all future generations. *Great things doth he, which we cannot comprehend.*—But *he sealeth up the hand of every man, that all men may know his* divine *work;* Gen. i. 11, 25. Job xxxvii. 5, 7.

SECTION II.

THE LAWS OF NATURE SUFFICIENT FOR THE PRODUCTION OF ANIMALS AND VEGETABLES.

It was a work of wisdom, infinitely various, to form all the creatures that swim or fly, that run, creep, or move in the air, earth, and water, and to fit every one of them with organs and con-natural motions suited to the purposes of their different life : And it is the same wisdom which dictated the laws of nature and motion in the first week of the creation, and the same power which first put them in execution, that proceed, by the force of those unchanging dictates, to produce all the successive nations and ages of the animal and vegetable worlds. Those great prolific words, *Be ye fruitful and multiply*, have almighty power in them, and reach to the end of time. God himself is the supreme agent and mover, in all the fermenting materials that teem with plants and animals, and he acts still according to the original and uniform laws of motion which his wisdom first dictated, and his power imposed on the parts of matter.

But there have been some philosophers and divines who imagine, that because they cannot solve the production of plants and animals by those obvious laws of motion and matter which we are acquainted with, therefore no plant or animal is produced without some new immediate and present interposure of the skill, and power, and agency of God, different from the original dictates or laws of motion. Thus the

common laws of nature which God has established, being in their esteem not sufficient for this end, they introduce his own immediate hand in millions of instances to counter-work those laws, or to assist the deficiency of them by a creating power. By this means God is, as it were, constrained to exert a miraculous influence at the generation and production of every new animal throughout the world, as though it were impossible that a mouse, a pigeon, or a butterfly, should be formed without it; and thus his work of creation is never finished, and miracles are wrought by millions every day: For whatsoever is done by him in the material world, not according to the laws of nature, is miracle.

In my opinion, it is a rash and venturous thing to determine that these productions are impossible according to the common appointed laws of nature and motion; and to set intellectual agents at work upon them merely because our knowledge of these laws of matter is not yet sufficient to describe the manner how it may be done.

Would it not be a ridiculous and unphilosophical account of the motion of all the planets, with all their satellites, or moons, in our age, to tell the world that so many distinct angels rolled them round the sun, and gave us day and night, summer and winter? Let us run back to the old solid spheres and their epicycles again, and please ourselves and our hearers with describing how they are turned round by angelic powers with sweet and heavenly music, and this is the harmony of the spheres. But is this philosophy? May not the original projectile force proposed by Sir Isaac Newton, which he supposes restrained by the centripetal force, or gravitation, completely answer this end without the incessant labours of an angel? And is not this law of nature, supposing it to be originally appointed and still preserved by the Creator? Is there any need of immediate new interpositions of his almighty influence in any different manner to keep all the planetary worlds in their proper motions, so long as he designs them to move? And does not this single principle of gravitation, or the mutual attraction of all matter, perform various millions of effects in this our globe of earth and water among inanimate as well as animated beings?

It may not be amiss to take notice here also, that some very ingenious moderns have supposed the peculiar powers of magnetism, electricity, elasticity, and others, are divine laws of motion, appointed by God himself in the material creation, and superadded to the essential properties of matter, considered merely as an extended solid substance.

And what if we should suppose there may be some other such general law of motion superadded to the vegetable world, as the peculiar spring of all vegetation? How simple a principle is gravity in itself? How multiform and infinite are its effects? May not all plants in their rise and growth, their verdant foliage, their beautiful bloom and seed in successive ages, take their origin from another such simple principle applied by the skill of the divine artificer, who gave all these vegetable beauties their first existence?

And what if we should go one step further? Perhaps the laws of motion, which God has ordained in the animal world, may still be somewhat different from, or superadded to those of the vegetable; and these additional laws may be sufficient to form all the eggs and animals in the world: And if these laws are settled and constant, this is nature as much as the other. It is very unphilosophical to introduce the divine agency, either contrary to, or different from, the settled rules of his own creation, without a just apparent necessity, or where the case requires not a proper miracle to be wrought; yet how frequently is this done by men who pretend to philosophy? Or if God himself be

not immediately set at work afresh, what sort of strange inferior agents, what *anima mundi's*, what plastic powers have been invented and employed to mould and form every new plant and animal?

And as this sort of solution of difficulties is unphilosophical; so neither is it very honourable for a divine to say, concerning God our Creator, that the rules of natural motion, which he hath established in the world, are not sufficient for the hourly and necessary purposes and effects of providence. Let us grant that the bodies of a fly, or a mite, as well as an ox or an eagle, contain in them innumerable vessels and humours, tubes and strings, through which animal life is diffused, and reigns there in a thousand regular motions and surprising appearances: Let us also allow that the formation of one of these animal engines by two others, *i. e.* the propagation of their species, is incomparably the nicest and most surprising effect that these creatures ever perform: What then? Surely you will not say, that their own sense or reason, or any conscious powers they may be endued with, are sufficient for this purpose, or are capable of such productions: You will never grant it is owing to the skill of the parent-animals, that such swarms of wondrous young animals are propagated in successive ages: Why then may we not attribute to the all-wise God the glory of assuming them as his instruments into his grand scheme of providence, and employing them according to the common laws of nature and motion, which he hath established, each to produce his own image? Why may not a God have such an all-pervading stretch of thought, as to supply the universe with inhabitants in a perpetual succession, by the rules which he at first ordained amongst them, rules which he stamped with his own authority? And as he then pronounced them the laws of nature, so he continues their agency by his divine and universal influence through all generations.

Will you suppose that it derogates from the glory of divine providence, to represent the great engine of this visible world as moving onward in its appointed course, without the continual interposure of his hand? It is granted, indeed, that his hand is ever active in preserving all the parts of matter in all their motions, according to these uniform laws: But I think it is rather derogatory to his infinite wisdom, to imagine that he could not make the vegetable and animal, as well as the inanimate world, of such sort of workmanship as might regularly move onward in this manner for five or six thousand years, without putting a new hand to it ten thousand times every hour: I say ten thousand times every hour; for there is not an hour nor a moment passes, wherein there are not many millions of animals actually forming in the southern or northern climates.

He that can make a clock, with a great variety of beauties and motions, to go regularly a twelvemonth together, is certainly a skilful artist; but if he must put his own hand to assist those motions every hour, or else the engine will stand still, or the wheels move at random, we conceive a much meaner opinion of his performance and his skill. On the other hand, how glorious and divine an artificer would he be called, that should have made two of these pieces of clockwork above five thousand years ago, and contrived such hidden springs and motions within them, that they should have joined together to perpetuate the species, and thus continue the same sort of clocks in more than a thousand successions down to this day? Though each of their springs might fail in forty years time, and their motions cease, or their materials decay, yet that by the means

of these two original engines, there should be engines of the same kind multiplied upon the face of the earth, by the same rules of motion which the artist had established in the day when he first formed them.

Such is the workmanship of God; for nature is nothing but his art. Such is the amazing penetration of divine skill, such the long reach of his foresight, who has long ago set his instruments at work, and guarded against all their possible deficiencies; who has provided to replenish the world with plants and animals to the end of time, by the wondrous contrivance of his first creation, and the laws he then ordained.

Thus every whale, eagle, and apple-tree, every lion and rose, fly and worm, in our age, are as really the work of God, as the first which he made of the kind. It is so far from being a derogation to his honour, to perpetuate all the species by such instruments of his agency for many ages, that it rather aggrandizes the character of the Creator, and gives new lustre to divine wisdom: For if any thing can be said to be easier or harder in this sort of almighty work, we may suppose it a more glorious difficulty for a God to employ a sparrow or an oyster, to make a sparrow or an oyster, than to make one immediately with his own hand. Perhaps there is not a wasp nor a butterfly now in the world, but has gone through almost six thousand ancestors, and yet the work of the last parent is exquisitely perfect in shape, in colour, and in every perfection of beauty: But it is all owing to the first cause. This is wisdom becoming a God, and demands an eternal tribute of wonder and worship.

APPENDIX.

I KNOW some modern philosophers have supposed that the formation of plants and animals is beyond the reach and power of the laws of nature, and therefore they conceive that the Creator himself, in the first individuals of every kind, actually formed and included all the future plants and animals that should ever proceed from them, complete in all their parts; and these were contained in their distinct seeds, and perhaps decreasing in bulk successively in proportion almost infinitely less and less, as the seed is less than the plant or animal, and as each animal and plant in this miniature or minute form, is less than the same plant and animal full grown: And they suppose that the daily productions of nature are nothing else but the unveiling of these little plants and animals, in continual succession, bringing them forth into light, and stretching and enlarging their parts by new interwoven fibres, and pulpous matter coming between.

One great reason they give for this is, that in the minute bud of a plant, suppose a tulip, even in the winter, they can by a microscope discern the little stalk and leaves of the flower, and the small triangular pod of seed in it: And since matter is infinitely divisible, say they, why may not this minute tulip contain another, and that contain a third, and that a fourth, even to the number of many thousands in their diminished proportions?

To this I answer, in general, that from this one position, *viz.* that the microscope shews the formation of a perfect plant in its bud, a few months before the time of its appearance in full growth, it is a vast leap to the conclusion, that therefore it may con-

tain thousands and millions of such perfect plants in their infinitely decreasing proportions, and that for five or six thousand years before the times of their appearance. But I would give several particular reasons against this opinion.

1. If we consider the exceeding small proportion that is between the little supposed animals, or vegetables, which are contained in the seed, and the animals or vegetables in their full growth, it will appear that in the fourth, fifth, or sixth generation they will be smaller than the homogeneous particles of the subtilest liquors, and therefore they cannot be organized and living bodies, all which require tubes with liquids in them. How much more impossible is this supposition when we attempt to derive one hundred generations of men or brutes in this manner, or six thousand generations or successions of annual insects or plants?

2. If, to relieve this difficulty, you run into infinite possible divisibilities of matter, yet there is all the reason to infer these cannot be actually so in nature, *i. e.* not infinitely small particles, because of the determined limit of the size of all homogeneous particles of liquors, which have ever yet fallen under the search of philosophy. I add here further, that this sort of argument from the infinite divisibility of matter would be as powerful to prove this strange doctrine, if the world had stood six hundred thousand years, or even in an eternal world, as it is in a world of six thousand years standing. And let it be observed, that arguments drawn merely from infinites, lead our finite reasoning powers so far out of their own depth, that we are lost in them, and can hardly ever be well assured that our arguments are effectually conclusive, or our inferences well drawn. See Essay XII. Sect. 3.

3. Suppose every acorn that grew on the first oak should contain, in the little germ or bud of it (which is a very small part of the acorn itself) all the oaks that might be produced from thence, even to the end of the world, in one single line of direct succession, this is prodigious and astonishing beyond all reasonable belief: But according to this hypothesis, we must suppose, that the germs or buds in each of these acorns do actually contain also all the acorns that those oaks might annually produce, together with all their annual leaves; and, again, all the younger oaks which might be produced from each of these acorns in ten thousand collateral successions: Now this raises the number to such millions of millions, that nothing but the incomprehensible idea of infinite can ever be supposed to answer; and at best in this controversy, it seems rather to be a refuge of darkness to hide in, than a clear explication.

4. We find many plants may be produced by slips or twigs of the same plant, and that of trees as well as herbs and flowers, such as the vine, the willow, &c. And it is not to be supposed that each twig and slip have had all these future seeds and trees actually formed in them, together with all their leaves and fruits, the first week of the creation, even though we should allow every seed to contain all these infinite successions of their species.

5. Have we not reason to conceive that every seed of a plant is formed alike? Has not then every acorn and every bean that is devoured by animals for their food, and every grain of corn, as well as all the fruits of the trees and their seeds which are eaten by men and birds, the same millions of these complete trees or plants, corn or herbage, contained in them in miniature, which are ascribed to those other seeds and fruits which are actually sown or planted out, in order to produce new vegetables of their own kind?

Now if it be so, what an infinite number of complete trees, flowers, plants, and herbs would be made by the exquisite artifice of the Creator to no purpose? And thus a vastly greater part of the original and immediate workmanship of God in the first week of creation, would be labour in vain, since none of it attains its proper end, but only in those few seeds and fruits which afterwards grow up into complete plants or trees, which is not one to ten thousand, or perhaps to a million.

The same thing might be said of animals. If every male animal contains in it millions of animalcules, as Mr. Lewenhoeck supposes, by the use of his microscope, and every such male animalcule actually contains millions of less animalcules, and so on in progression for a hundred or a thousand generations of men, brutes, or insects, since the days of Adam, what an immense waste of creatures is here? What an amazing and superfluous multitude of dogs, cats, lions, bears, horses, elephants, eagles, and whales, worms and flies, as well as of men and women, all formed with their millions of tubes and fibres by exquisite wisdom, and all designed to be mere wastes of nature, except those very few comparatively which come into the visible world as distinct animals; since for every animal that comes to be born, there would be many millions lost and wasted according to this hypothesis? Is it possible that the wisdom and work of a Creator should be wasted in so insignificant a manner to support such an hypothesis or conjecture?

6. When a limb of an animal, or some necessary part of a plant, has been broken off, what powerful efforts have sometimes been observed in the operations of nature towards the formation of a new limb, or part, of the same kind? I have seen the claw of a crab rising up in a less form, in the room of one which the creature seems to have been deprived of by some injurious accident: Now, I would inquire, whether this creature was formed at first, in its minute original, with three claws? Or whether there was an actual provision made for every such accident in the first week of the creation?

In the vegetable world these regular productions of the new parts of a plant, are much more common. When the top of an ash is cut off to make a pollard of it, or of a plum-tree to make it bear more, or better fruit, I beg leave to inquire, whether all the branches, leaves, and fruit, that sprout afterward from the stock yearly, in twenty, thirty, or forty years, were formed actually in the first ash, or plum-tree, that God created? Did the Creator provide actually sufficient leaves and fruit in every first tree, to answer for such voluntary mutilations or loppings of the gardener in five or six thousand years to come? How unreasonable is it to suppose this.

But, on the other hand, if the natural laws of motion are left to form the limb of an animal, or the leaves, branches, and fruit of a vegetable, on such occasions, why might not the same divine wisdom contrive laws which might form the whole animal or vegetable, in its appointed successions, in the course of nature?

7. In the formation of insects, and especially of larger animals, daily experiment destroys this hypothesis, by shewing us, that the animal, in several parts and members of it, is imperfect and defective in the embryo, the work is unfinished, and the laws of nature finish it by degrees, till it becomes ripe for production.*

* This account seems more exactly conformable to the words of Scripture; *Psalm* cxxxix. 16, "Thine eyes did see my substance, yet being imperfect, and in thy book my members were written, which in continuance were fashioned, when as yet there was none of them."

This same doctrine of the gradual formation of animals is maintained by plain reasoning upon fact by Dr. Wood-

I think this argument is conclusive alone, but all these considerations put together, give us abundant reason to believe, that it is by the continual and uniform agency of God upon the material world, according to certain laws of matter and motion which he has appointed in the vegetable and animal world, that there is a continual succession of plants and animals formed and maintained through all ages, and the honour of such a wondrous contrivance is due to the great Creator.*

SECTION III.

OF THE NOURISHMENT AND GROWTH OF PLANTS.

In the beginning of time and nature, at the command of God, the earth brought forth plants and herbs, and four-footed animals in their various kinds; but the birds of the air, as well as the fishes, were produced by the same command out of the waters. This was intimated in a former section. The water and the earth were the first appointed mothers, if I may so express it, of all the animal and vegetable creation. Since that time they cease to be parents indeed, but they are the common nurses of all that breathes, and of all that grows. Nor is the wisdom of God much less conspicuous in constituting two such plain and simple beings as the earth and water, to be the springs of nourishment and growth to such an innumerable variety of creatures, than it was in the formation of them out of two such materials. Is it not counted an admirable piece of divine contrivance and wisdom, that the single principle of gravitation should be employed by the Creator, to answer so many millions of purposes among the heavenly bodies in their regular revolutions, as well as among the inhabitants, and the furniture of this earthly globe where we dwell? And may it not be esteemed as astonishing an effect of the same supreme wisdom, that two such simple things as water and earth should be the common materials out of which all the standing ornaments, the vegetable beauties, and the moving inhabitants of this our world, whether flying or creeping, walking or swimming, should receive their continual sustenance, and their increase?

Let us first consider this as it relates to the vegetable part of the creation. What a profusion of beauty and fragrancy, of shapes and colours, of smells and tastes, is scattered among the herbs and flowers of the ground, among the shrubs, the trees, and the fruits of the field! Colouring in its original glory and perfection triumphs here: Red,

ward, in his *Vindication of his Essay on the Natural History of the Earth*, cited out of the manuscript by Mr. Holloway, in that part which is called the *Translator's Introduction*, from p. 18, to p. 29, where he refutes Lewenhoeck's notion of generation rising from the animals in *semine masculino*. This book was published in 8vo. in 1726. But I am informed that this notion, of all animals being contained in the first male animal, is now exploded among the wiser philosophers of the age.

* Perhaps, after all, it may be inquired here, Whether plants and animals can possibly be formed by the mechanical motions and powers of matter? To this I answer, If by the word mechanical, we mean nothing else but those motions and powers, which proceed from the esseutial properties of matter considered as a mere solid extended substance, then I cannot allow the proposition to be true: But if we include in the word mechanism, all those additional powers and motions also, which arise from the original laws of motion which God imposed upon matter at first, such as gravitation or mutual attraction, and others of the same kind, theu I allow that all things in the successive ages of the world are formed mechanically; always supposing the divine agency preserving all the atoms of matter and their motions, according to these laws. And it is my opinion that all beyond this is miracle.

yellow, green, blue, purple, with vastly more diversities than the rainbow ever knew, or the prism can represent, are distributed among the flowers and blossoms. And what variety of tastes, both original and compounded, of sweet, bitter, sharp, with a thousand nameless flavours, are found among the herbs of the garden! What an amazing difference of shapes and sizes appears amongst the trees of the field and forest in their branches and their leaves; and what a luxurious and elegant distinction in their several fruits! How very numerous are their distinct properties and their uses in human life! And yet these two common elements, earth and water, are the only materials, out of which they are all composed, from the beginning to the end of nature and time.

Let the gardener dress for himself one field of fresh earth, and make it as uniform as he can; then let him plant therein all the varieties of the vegetable world, in their roots or in their seeds, as he shall think most proper; yet out of this common earth, under the droppings of common water from heaven, every one of these plants shall be nourished, and grow up in their proper forms; all the infinite diversity of shapes and sizes, colours, tastes, and smells, which constitute and adorn the vegetable world, would the climate permit, might be produced out of the same clods. What rich and surprising wisdom appears in that almighty Operator, who out of the same matter shall perfume the bosom of the rose, and give the garlic its offensive and nauseous powers; who from the same spot of ground, shall raise the liquorice and the wormwood, and dress the cheek of the tulip in all its glowing beauties! What a surprise, to see the same field furnish the pomegranate and the orange tree, with their juicy fruit, and the stalks of corn with their dry and husky grains; to observe the oak raised from a little acorn, into its stately growth and solid timber; and that pillars for the support of future temples and palaces should spring out of the same bed of earth, that sent up the vine with such soft and feeble limbs as are unable to support themselves! What a natural kind of prodigy is it, that chilling and burning vegetables should arise out of the same spot; that the fever and frenzy should start up from the same bed where the palsy and the lethargy lie dormant in their seeds! Is it not exceeding strange, that healthful and poisonous juices should rise up, in their proper plants, out of the same common glebe, and that life and death should grow and thrive within an inch of each other?

What wondrous and inimitable skill must be attributed to that supreme power, that first cause, who can so infinitely diversify effects, where the servile second cause is so uniform, and always the same!*

It is not for me, in this place, to enter into a long detail of philosophy, and shew how the minute fibres and tubes of the different seeds and roots of vegetables take hold of, attract, and receive the little particles of earth and water, proper for their own growth; how they form them at first into their own shapes, and send them up aspiring above ground by degrees, and mould them so as to frame the stalks, the branches, the leaves, and the buds of every flower, herb, and tree. But I presume the world is too weary of substantial forms, and plastic powers, and names without ideas, to be persuaded that

* *Note,* I do not pretend that all the particles of which common earth is composed, are exactly uniform and similar: It is allowed that there are some atoms of it much more suited to vegetation than others, and perhaps to the nourishment of some vegetables rather than others. The same is granted concerning water. But I call these elements or materials uniform in this respect, that in every crumb of earth, and in every drop of water, there is no such variety possible, as actually to contain the proper parts of every plant in their own form.

these mere creatures of fancy should ever be the operators in this wondrous work. It is much more honourable to attribute all to the design and long forethought of God the Creator, who formed the first vegetables in such a manner, and appointed their little parts to ferment under the warm sun-beams, according to such established laws of motion, as to mould the atoms of earth and water which were near them in their own figure, to make them grow up into trunk and branches, which every night should harden into firmness and stability; and again to mould new atoms of the same element into leaves and bloom, fruit and seed, which last being dropped into the earth, should produce new plants of the same likeness to the end of the world.

If I were to represent this matter to the unlearned part of mankind, I might do it perhaps more intelligibly to them by this rude and coarse simile, than by the nicest accuracies of philosophical description. Suppose a mass of uniform green wax, of a very soft temperature, and a little mollified by the sun-beams, should be strained through small round pieces of cloth of all varieties of texture, shall I name, for instance, canvass, sackcloth, holland, diaper, lawn, &c. in some of which I will suppose the threads were so woven, as to make different stripes and figures. Now if the wax were forced upwards through all those cloths, you would see a vast variety, as it were, of rising stamina or fibres, which shall be supposed to constitute the different round stalks of these artificial vegetables: These would certainly make a very various appearance to the eye, according to their shapes and sizes; and perhaps also, in different positions of light and shade, might afford glimpses of as different colouring as the verdure of distinct plants. Suppose yet further, these rising fibres, or threads of wax to be condensed and hardened by the cool air of the night, and continue in their proper forms; and the next day the softer wax should be forced up again, not only through these cloths, but also through the interstices of these hardened threads or fibres: Here would be some plain difference of the next mould in which the growing part of this plant would be cast, in order to give it some further different shapes. Suppose the branches and leaves to be formed this way; and when these are condensed and hardened at night, then further efforts of straining the wax upward, might go on to represent in a rude manner some gross idea of vegetation. But it is easier for the sons of men to stand and wonder, and adore God the Creator, than to imitate, or even to describe his admirable works. In the best of their descriptions and their imitations of this divine artifice, they do but chatter like Hottentots, and paint like Goths and Vandals.

SECTION IV.

OF THE NOURISHMENT AND GROWTH OF ANIMALS.

Let us proceed, in the next place, to survey new wonders. All the animals of the creation, as well as the plants, have their original nourishment from these simple materials, earth and water. For all the animal beings which do not live upon other animals, or the produce of them, take some of the vegetables for their food; and thus the brutes of prey are originally indebted to the plants and herbs, *i. e.* to the earth, for their support, and their drink is the watery element. That "all flesh is grass," is true

in the literal, as well as the metaphorical sense. Does the lion eat the flesh of the lamb? Doth the lamb suck the milk of the ewe? But the ewe is nourished by the grass of the field. Does the kite devour the chicken, and the chicken the little caterpillars or insects of the spring? But these insects are ever feeding on the tender plants, and the green products of the ground. The earth, moistened with water, is the common nurse of all. Even the fishes of the sea are nourished with some green vegetables that spring up there, or by preying on lesser fishes which feed on these vegetables.

But let us give our meditations a loose on this entertaining subject, and we shall find numerous instances of wonder in this scene of divine contrivance.

1. What very different animals are nourished by the same vegetable food! The self-same herbage or fruits of the earth, by the divine laws of nature and providence, are converted into animated bodies of very distinct kinds. Could you imagine that half the fowls of the air, as different as they are, from the crow to the titmouse, should derive their flesh and blood from the productions of the same tree, where the swine watches under the boughs of it and is nourished by the droppings of the fruit? Nor need I stay to take notice what numerous insects find their nests and their food, all the summer season, from the same apples or apricots, plums or cherries, which feed hogs and crows, and a hundred small birds. Would you think that the black and the brindled kine, with the horses both grey and bay, should clothe themselves with their hairy skins of so various colours, out of the same green pasture where the sheep feeds, and covers himself with his white and woolly fleece? And at the same time the goose is cropping part of the grass to nourish its own flesh, and to array itself with down and feathers. Strange and stupendous texture of the bodies of these creatures, that should convert the common green herbage of the field into their different natures, and their more different clothing? But this leads me to another remark.

2. What exceeding great diversity is found in the several parts, limbs, and coverings even of the same creature! An animated body is made up of flesh and blood, bones and membranes, long hollow tubes, with a variety of liquors contained in them, together with many strings and tendons, and a thousand other things which escape the naked sight, and for which anatomy has hardly found a name: Yet the very same food is by the wondrous skill and appointment of the God of nature formed into all these amazing differences. Let us take an ox to pieces, and survey the wondrous composition. Besides the flesh of this huge living structure, and the bones on which it is built, what variety of tender coats and humours belong to that admirable organ the eye? How solid and hard are the teeth which grind the food? How firm the general ligaments that tie the joints of that creature together? What horny hoofs are his support, and with what different sort of horny weapons has nature furnished his forehead? Yet they are all framed of the same grassy materials: The calf grazes upon the verdant pasture, and all its limbs and powers grow up out of the food to the size and firmness of an ox. Can it be supposed, that all these corpuscles, of which the several inward and outward parts of the brute are composed, are actually found in their different and proper forms in the vegetable food? Does every spire of grass actually contain the specific parts of the horn and the hoof, the teeth and the tendons, the glands and membranes, the humours and coats of the eye, the liquids and solids, with all their innumerable varieties in their proper distinct forms? This is a most unreasonable supposition and vain philosophy.

No, it is the wisdom of the God of nature that distributes this uniform* food into the several parts of the animal by his appointed laws, and gives proper nourishment to each of them.

Again, 3dly, If the food of which one single animal partakes be never so various and different, yet the same laws of motion, which God has ordained in the animal world, convert them all to the same purposes of nourishment for that creature. Behold the little bee gathering its honey from a thousand flowers, and laying up the precious store for its winter food. Mark how the crow preys upon a carcase, anon it crops a cherry from the tree; and both are changed into the flesh and feathers of a crow. Observe the kine in the meadows feeding on a hundred varieties of herbs and flowers, yet all the different parts of their bodies are nourished thereby in a proper manner: Every flower in the field is made use of to increase the flesh of the heifer, and to make beef for men: And out of all these varieties there is a noble milky juice flowing to the udder, which provides nourishment for young children.

So near akin is man, the lord of the creation, in respect of his body, to the brutes that are his slaves, that the very same food will compose the flesh of both of them, and make them grow up to their appointed stature. This is evident beyond doubt in daily and everlasting experiments. The same bread-corn which we eat at our tables will give rich support to sparrows and pigeons, to the turkey and the duck, and all the fowls of the yard: The mouse steals it and feeds on it in his dark retirements; while the hog in the sty, and the horse in the manger, would be glad to partake. When the poor cottager has nursed up a couple of geese, the fox seizes one of them for the support of her cubs, and perhaps the table of the landlord is furnished with the other to regale his friends. Nor is it an uncommon thing to see the favourite lap-dog fed out of the same bowl of milk which is prepared for the heir of a wealthy family, but which nature had originally designed to nourish a calf. The same milky material will make calves, lap-dogs, and human bodies.

How various are our dishes at an entertainment! How has luxury even tired itself in the inventions of meats and drinks in an excessive and endless variety! Yet when they pass into the common boiler of the stomach, and are carried thence through the intestines, there is a whitejuice strained out of the strange mixture, called *chyle*, which from the lacteal vessels is conveyed into the blood, and by the laws of nature is converted into the same crimson liquor. This being distributed through all the body by the arteries, is farther strained again through proper vessels, and becomes the spring of nourishment to every different part of the animal. Thus the God of nature has ordained, that how diverse soever our meats are, they shall first be reduced to an uniform milky liquid, that by new contrivances and divine art, it may be again diversified into flesh and bones, nerves and membranes.

How conspicuous, and yet how admirable are the operations of divine wisdom in this

* By the word *uniform* here, I do not mean that all the parts of each spire of grass, by which animals are nourished and increased, are perfectly similar, any more than the parts of earth and water, by which vegetables are nourished and grow, are all perfectly of one shape and size; but I believe it will be easily granted me, that the parts of every spire of grass are not so various and multiform, as to answer all the various parts of the animal which are supported and increased by it, as well as the flesh and limbs, &c. of different animals. This will be yet more evident, if we consider that nature turns all food whatsoever into the uniform substance of *chyle*, before the animal is nourished by it, which shall be shewn immediately.

single instance of nourishment! But it is no wonder that a God who could create such astonishing and exquisite pieces of machinery as plants and animals, could prescribe such laws to matter and motion as to nourish and preserve the individuals, as well as to propagate the species through all ages to the end of time.

SECTION V.

AN AMUSING DIGRESSION CONCERNING THE CHANGES OF MATTER.

Perhaps it may not be amiss to follow a track of pleasing amusement, which by a very easy and natural inference arises from the subject in hand, and which was very happily represented in a late conversation among some of the great and the wise. *Theron*, a man of wealth and figure, but unacquainted with philosophic science, sat in the midst of his friends, of both sexes, in a stately room with rich variety of furniture. Among other conversation, *Theron* was complaining, that he had heard it often said, how much we were all indebted to the country and the plough; but for his part he knew no obligation that we had to that low rank of mankind, whose life is taken up in the fields, the woods, and the meadows, but that they paid their rents well, that the gentlemen might live at their ease. *Crito* was pleased to seize the occasion, and entertained the gay audience with a suprising lecture of philosophy.

Permit me, *Theron*, said he, to be an advocate for the peasant, and I can draw up a long account of particulars, for which you are indebted to the field and the forest, and to the men that cultivate the ground, and are engaged in rural business. Look around you, on all the elegant furniture of the room, survey your own clothing, cast your eyes on all the splendid array of *Therina*, and *Persis*, and the other ladies near them, and you will find, that except a few glittering stones, and a little gold and silver which was dug out of the bowels of the earth, you can scarce see any thing that was not once growing green upon the ground, through the various labours of the planter and the plowman. Whence came the floor you tread on, part whereof is inlaid with wood of different colours? Whence these fair pannels of wainscot, and the cornice that encompasses and adorns the room? Whence this lofty roof of cedar, and the carved ornaments of it? Are they not all the spoils of the trees of the forest? Were not these once the verdant standards of the grove or the mountain? What are your hangings of gay tapestry? Are they not owing to the fleece of the sheep, which borrowed their nourishment from the grass of the meadows? Thus the finery of your parlour once was grass; and should you favour me with a turn into your bed-chamber, I could shew you that the curtains and the linen, and the costly coverings where you take your nightly repose, was some years ago all growing in the field.

But I need not retire from the room where we are seated to give you abundant discoveries of this truth. Is not the hair of camels a part of the materials which compose those rich curtains which hang down by the window, and the easy chairs which accommodate your friends? And if you think a little, you will find that camels with their hair were made of grass, as well as the sheep and their wool. I confess the chimney and the coals, with the implements of the hearth, the brass and iron, were dug out of the ground from their beds of different kinds, and you must go below the surface of the earth to fetch them: But what think you of those nice tables of mosaic work? They

confess the forest their parent. What are the books which lie in the window, and the little implements of paper, and wax, pens, and wafers, which I presume may be found in the scrutoire? And may I not add to these, that inch of wax-candle, which stands ready to seal a letter, or perhaps to light a pipe? You must grant they have all the same original, they were once mere vegetables. Paper and books owe their being to the tatters of linen, which was woven of the threads of flax or hemp: The pasteboard covers are composed of paper, and the leather is the skin of the calf that drew its life and sustenance from the meadows. The pen that you write with was plucked from the wings of the goose, which lives upon the grass of the common: The inkhorn was borrowed from the front of the grazing ox; the wafer is made of the paste of bread-corn; the sealing-wax is said to be formed chiefly of the gum of a tree, and the wax for the candle is originally plundered from the bee, who stole it out of a thousand flowers.

Permit me, ladies, said the philosopher, to mention your dress: Too nice a subject indeed for a scholar to pretend any skill in it: But I persuade myself, your candour will not resent my naming the rich materials, since I leave those more important points, the fashion and the air, to be decided entirely by your superior skill. Shall I inquire then, who gave *Persis* the silken habit which she wears; did she not borrow it from the worm that spun those shining threads? And whence did the worm borrow it but from the leaves of the mulberry-tree, which was planted and nourished for this purpose by the country swain? May I ask again, how came *Therina* by those ornaments of fine linen which she is pleased to appear in, and the costly lace of Flanders that surrounds it? Was it not all made of the stalks of flax, that grew up in the field like other vegetables? And are not the finest of your muslins owing to the Indian cotton-tree? Nor can you tell me, *Theron*, one upper garment you have, whether coat, cloak, or night-gown, from your shoulders to your very feet, as rich and as new as you think it, which the sheep or the poor silkworm had not worn before you. It is certain, the beaver bore your hat on his skin: That soft fur was his covering before it was yours; and the materials of your very shoes, both the upper part and the soles of them, covered the calf or the heifer, before they were put on your feet: All this was grass at first, for we have seen that all the animal world owes its being to vegetables.

The company seemed strangely surprised, and thought they had been led into fairy-land; they imagined themselves decoyed into the midst of enchantments, while their fancy roved through all these transformations. Yet the discourse seemed to carry such evidence and conviction with it, that though they retained their wonder, they could not withhold their assent.

When *Crito* had given them leave to muse a little, he took up the argument again. Give me leave, madam, said he to *Therina*, without offence, to lead you into further wonders. You have seen that the furniture of the place where we are, as well as the precious attire in which you are dressed, were lately the production and the ornaments of the forest, the meadow, or the garden. But could you forgive me, madam, if I should attempt to persuade you, that that beautiful body of yours, those features, and those limbs, were once growing also in the fields and the meadows? I see lady, you are a little shocked and surprised at the thought. I confess, the ideas and sentiments of philosophy are not always so courtly and so favourable to human nature, as to be addressed to the tender sex: But pardon me, *Therina*, if I inquire, was not your infancy nursed with milk

and bread-corn? Have you not been fed with wheat, though it was of the finest kind? And your drink, what has it been but either the infusion of barley, or the juice of the grape, or, for variety, perhaps the cyder-grove has supplied you? The flesh with which you have been nourished to such a well-proportioned stature, belonged to four-footed animals, or to the fowls of the air; and each of these have either been fed with corn or grass: Whence then, madam, has your own body been supported, and what do you think it is made of?

But it is safer to transfer the argument to myself. These limbs of mine, *Therina*, owe themselves entirely to the animal or vegetable food, to the roots or the stalks, to the leaves or the fruit of plants, or to the flesh of brute creatures, which have passed through my mouth for these fifty years, or the mouths of my parents before me: This hand would have been worn to a mere skeleton, my arms had been dry bones, and my trunk and ribs the statue of death, had they not all received perpetual recruits from the field. These lips which now address you are of the same materials, and they were once growing like the grass of the earth. This very flesh, which I call mine now, did belong to the sheep or the ox, before it was a part of me; and it served to clothe their bones before it covered mine. You know, *Theron*, you are a gentleman who delight in rural sports when you reside at your country-seat, and you love to feast on the game that you have pursued. Did you ever suppose that any part of yourself was once hurried through the air in the breast of a frighted partridge, which came before night into your net? Or that any piece of you was ever driven through the fields before the full-mouthed hounds, on the legs of a hunted hare, which was the next day prepared for your table? Had you ever so strange a thought as this is? And can you believe it now? Or, upon a survey of my argument, can you tell how to deny it? And what are hares and partridges made of, but growing herbage or shattered corn?

It is true, you have sometimes tasted of fish, either from the sea or the rivers; but even these, in their original, also are a sort of grass; they have been fed partly by sea-weeds, and partly by lesser fish which they have devoured, whose prime and natural nourishment was from some vegetable matter in the watery world. In short, sir, I am free to declare that, whether I have eaten cheese or butter, bread or milk; whether I have fed on the ox or the sheep, or the fowls of the air, or the fish of the sea; I am certain that this body, and these limbs of mine, even to my teeth and nails, and the hairs of my head, are all borrowed originally from the vegetable creation. Every thing of me that is not a thinking power, that is not mind or spirit, was once growing like grass on the ground, or was made of the roots which supported some green herbage.

And now, *Theron*, what think you of all these paradoxes? Which of them do you cavil at? Which leaves you room for doubt or question? Is not philosophy an entertaining study, that teaches us our original, and these astonishing operations of divine wisdom and providence? But it teaches us also to have humble thoughts of ourselves, and to remember whence we came.

Theron, to conclude the discourse, confessed his surprise and conviction; he acknowledged the justice of *Crito*'s whole argument, gave him hearty thanks for his instructive lecture, and resolved to remember these amazing scenes of the operations of nature, and the adorable wisdom of God his Maker. Nor shall I ever forget, said he, the strange and unsuspected dependence of man on all the meaner parts of the creation. I am convinced that pride was never made for man, when I see how much akin his body is to the

fowls of the air and brutes of the earth. And I think, said he, I am more indebted to my tenants than ever I could have imagined, nor will I cast such a scornful eye again on the grazier and the farmer, since this flesh and blood of mine, as well as the furniture of my house and the clothes I wear, were once growing in the fields or the woods, under their care or cultivation; and I find I am nearer akin to them, since this self of mine, with all the finery that covers it, was made originally of the same materials with them and their coarser coverings.

SECTION VI.

THE SIMILAR OPERATIONS OF PLANTS AND ANIMALS.

It is with admiration and pleasure we take notice of the regular actions of animals, even in their earliest hours of life, before they can possibly be taught any thing by remark or imagination. Observe the young sparrows in the nest, see how the little naked creatures open their mouths wide to their dam, as though they were sensible of their dependence on her care for food and nourishment: But the chicken just released from the prison of the shell, can pick up its food with its own bill, and therefore it doth not open its mouth to beg food of the hen that hatched it. Yet the chicken seems to shew its dependence too, for when the first danger appears, you see it run and fly to the wing of its dam for protection; as though it knew, that though it could feed itself, yet it was not able to defend itself, but must trust to better security and a parent's wing. We admire these little creatures and their remarkable sagacity; we are surprised to find that they distinguish so happily, and pursue their proper interest; that they are so soon acquainted with their abilities and their wants, and come to use their understanding so very early; for it is evident, that the mere faculty of sense, that is, the passive reception of images or ideas, can never be sufficient to account for these wondrous imitations of reason; sense has nothing to do but with the present impression, and includes no reflection or prospect of the past or the future, no contrivance of means to an end, nor any action in order to obtain it.

But what shall we say, or how shall we account for it, if we are told, there are instances almost as admirable as these to be found in the vegetable world, where we never suspect sense or reason? The vine, as though it were sensible of its own weakness, thrusts forth its long tendrils, which curl round the branches of any stronger tree that stands near, and thus it hangs its weighty clusters upon the arms of the elm that support it. Nay, every cluster has a tendril belongs to it, and if any stronger twig of its own be within its reach, it hangs itself there by this tendril for support. The hop and the lupin, or french-bean, as though they knew they could not stand by themselves, find another way to raise their heads on high; they twine the whole length of their bodies round the poles or the rods which are planted near them; and thus their growth and their fruit are upheld from rotting upon the ground. The ivy, for the same reason, but by another contrivance, climbs up the oak, and sticks close to its sides: And the feeble plant which we vulgarly call the creeper, that can hardly raise itself three feet high alone, thrusts out its claws at proper distances, fixes them fast in the neighbouring wall or building, and mounts by this means to the tops of highest houses. What variety of artifice is found here among these feeble vegetables to support themselves!

Yet we believe these plants have no understanding, and mankind are all agreed they have no such thing as sense belonging to them; and we immediately recur to the wisdom of God the Creator, and ascribe the contrivance and the honour of it to him alone. It was he, we say, who gave the vine its curling tendrils, and the creeper its hooky claws: It was he instructed the one to bind itself with natural winding cords to the boughs of a stronger tree, and he taught the other, as it were, to nail itself against the wall. It was he shewed the ivy to ascend straight up the oak; and the hop and the lupin, in long spiral lines, to twine round their proper supporters.

Let us inquire now, what do we mean by such expressions as these? Truly nothing but this; that God formed the natures of these vegetables in such a manner, as that, by certain and appointed rules of mechanical motion, they should grow up and move their bodies and their branches, so as to raise and to uphold themselves and their fruit. Thus the wisdom of God, the great Artificer, is glorified in the vegetable world.

And why should we not give God the Creator the same honour of his wisdom in the animal world also? Why may we not suppose that he has formed the bodies of brute creatures, and all their inward springs of motion, with such exquisite art, as even in their youngest hours, without reasoning and without imitation, to pursue those methods as regularly, which are necessary for their life and their defence, by the same laws of motion and the same unthinking powers? This is nature when God has appointed it. This seems to be the true idea, and the clearest explication of that obscure word, instinct.

If we allow these young animals to perform all their affairs by their own contrivance and sagacity, why do not we ascribe the same sagacity and artifice to vines and ivy, that we do to young sparrows or chickens? The motions of the plants are slower indeed, but as regular and rational as those of the animals; they shew as much design and contrivance, and are as necessary and proper to attain their end.

Besides, if we imagine these little young birds to practise their different forms of motion, for their nourishment, or defence, by any springs of reason or thought, meaning or design in themselves, do we not ascribe understanding to them a little too soon, and confess their knowledge is much superior to our own, and their reason of more early growth? Do we not make men, or rather angels, of them, instead of brute creatures? But if we suppose them to be actuated by the peculiar laws of animal motion, which God the Creator, by a long foresight, has established amongst his works, we give him the honour of that early and superior reason, and we adore the divine Artificer; Psalm cxlv. 10, *All thy works shall praise thee, O Lord.*

But we are lost among these wonders of thy wisdom, we are ignorant of thy divine and inimitable contrivances. What shall we say to thee, thou all-wise creating power? Thy works surprise us; the plants and the brutes puzzle and confound our reasonings: We gaze at thy workmanship with sacred amazement, thy ways in the kingdom of nature are untraceable, and thy wonders past finding out.

SECTION VII.

OF THE PRINCIPLES OF ACTION IN BRUTES AND MEN.

But what will some readers say, when they peruse these discourses? Are plants and brutes so very near akin to each other, creatures which we have always distinguished into the sensible and the senseless? Have birds and beasts no more perception or feeling, knowledge or consciousness, understanding or will, than the herbs, the trees, and the flowers? Is the grass of the field as wise a thing as the animal which eats it? Excuse me here, my friends; I dare assert no such paradoxes. What if some of the early actions of brute creatures are merely the effects of such machinery and instinct as I before described? It does not follow thence that all the actions and operations of their lives must be ascribed to such a mechanical principle. Even in human nature, where there is an undoubted principle of sense and reasoning, there are some early actions which seem to be the proper effects of such instinct and mechanism, and are owing to the wondrous divine artifice in the contrivance of their animal bodies, and not to any exercise of their own reasoning powers. How doth the infant hunt after the breast, and take it into its month, moving the lips, tongue, and palate in the most proper forms for sucking in the milk to nourish it? How does it readily shut the eyes to cover them from any danger near? How does it raise its cries and wailings aloud for help when it is hurt? These are certainly the effects of instinct in their outward members, as much as the circulation of their blood and digestion of their food in their bowels and inward parts.

It is certain there are several operations in the lives of brute creatures, which seem to be more perfect imitations of reason, and bid fairer for the real effect of a reasoning principle within them, than these early actions which I have mentioned. What strange subtlety and contrivance seem to be found in the actions of dogs and foxes! What artifices appear to be used, both by birds and beasts of prey, in order to seize the animals which were appointed for their food, as well as in the weaker creatures to avoid and escape the devourer! How few are there of the passions as well as the appetites of human nature, which are not found among several of the brute creatures! What resentment and rage do they discover! What jealousy and fear, what hope and desire, what wondrous instances of love and joy, of gratitude and revenge! What amazing appearances of this nature are observed in birds and beasts of the more docile and domestic kind, that they utterly puzzle and pose the wisest of philosophers to give a plain, fair, and satisfactory account how all these things can be performed by mechanism, or the mere laws of matter and motion? I confess, it is impossible for us to determine with any certainty, how far the powers of mechanism can go, when under the direction of infinite wisdom in the original formation of these engines: And how far certain general laws of animal motion may be at first appointed by God the Creator, which may reach to perform all the visible appearance in the brutal creation for six thousand years together. But if this be machinery, contrived by an all-pervading

mind, it is certain, that it is not to be explained by all the present sciences and reasonings of men.

I confess also, on the other hand, I am not very fond of allowing to brutes such an immaterial soul, such a thinking and reasoning power, which, in its own nature, must carry immortality with it. Every emmet upon a mole-hill, and every bee in a swarm, lays as just a claim to such a spirit as an ox or an elephant. The amazing instances of appearing sagacity and reasoning, design and choice, which discover themselves in these little creatures, make as good pretence to such a sublime principle of consciousness, judgment, and liberty. And why may not the millions of mites in a cheese, and the nations of other animalcules, which swarm invisible to the naked eye, be entitled to the same reasoning powers or spirits, since their motions, so far as glasses discover them, are as happily suited to the ends of animal life? It is difficult to bring oneself to believe that an immaterial spirit is prepared for each of these minute creatures so soon as their body is formed, and that at the death of the body it ceases to exist, or that it passes, by divine appointment, from one animal to another, by certain unknown laws of transmigration.

The late Bishop Burnet, who was no indiligent inquirer into various knowledge, seems to determine, in his *Exposition of the First Article of the Church of England*, third edition, page 34, that one of these two opinions is now the result of the thoughts of the learned, *viz.* that either brutes are mere machines, or that they have reasonable souls. "It is certain," says he, "that either beasts have no thought or liberty at all, and are only pieces of finely organized matter, capable of many subtle motions, that come to them from objects without them; but that they have no sensation nor thought at all about them; or,"— But he supposes, that "human nature can hardly receive or bear this notion, because there are such evident indications of even high degrees of reason among the beasts;" he concludes, therefore, "It is more reasonable to imagine, that there may be spirits of a lower order in beasts, that have in them a capacity of thinking and choosing; but that it is so entirely under the impressions of matter, that they are not capable of that largeness, either of thought or liberty, that is necessary to make them capable of good or evil, of rewards and punishments; and that therefore they may be perpetually rolling about from one body to another;" *i. e.* by perpetual transmigrations from body to body.

It is far beyond all my skill in philosophy to adjust and determine these differences, and to decide this question. Sometimes I think it is hard to allow even sensation to brutes, or to imagine that their Creator, who is perfect equity and goodness, should expose creatures, who are innocent and could never sin, to such a life of intense toil, anguish, and misery, and to such cruel deaths as some of them sustain. At other times I can hardly avoid ascribing reason to them, when I observe so many signatures of all the violent and the tender passions, both in their motions, their eyes, and their countenance, and so many appearances of thought, contrivance, and design. Every ant and worm puzzles my reasonings, and baffles all my science.

But on which side soever this question be determined, I desire to lay down this bar or caution against the inference that atheists or materialists would make on this subject; and that is, that how many actions soever may be performed by brute creatures, without any principle of sense or consciousness, reason or reflection, yet these things can never

be applied to human nature. It can never be said, that man may be an engine too, that man may be only a finer sort of machine, without a rational and immortal spirit. And the reason is this: Each of us feel, and are conscious within ourselves, that we think, that we reason, that we reflect, that we contrive and design, that we judge and choose with freedom, and determine our own actions: We can have no stonger principle of assent to any thing than present, immediate, intellectual consciousness. If I am assured of the truth of any inference whatsoever, it is because I am sure of my consciousness of the premises, and of my consciousness that I derive this inference from them. My consciousness of these premises, therefore, is a prior ground of assurance, and the foundation of all my certainty of the inferences. Let a thousand reasons therefore be laid before me, to prove that I am nothing but an engine, my own inward present consciousness of this proposition, that I have thoughts, that I have reasoning powers, and that I have a will and free choice, is a full evidence to me, that these are false reasonings, and deceitful arguments: I know and am assured, by what I feel every moment, that I have a spirit within me capable of knowing God, and of honouring and dishonouring my Maker, of choosing good or evil, of practising vice or virtue; and that I hereby am bound to approve myself to the almighty Being that made and governs me, who will reward me in some future state or other, according to my behaviour in this.

And as I can certainly determine this truth, with regard to my own nature, so when I see creatures round about me of the very same species with myself, I justly infer the same truth concerning them also: I couclude with assurance, that they are not mere engines, but have such reasonable and immortal spirits in them, as I find in myself. It is this inference of similar and equal causes from similar and equal effects, that makes a great part of the science of mankind.

Besides, I daily hear men discoursing with me on any subject, and giving as regular and reasonable answers to my inquiries, as I do to theirs; I feel within myself, it is impossible for me to do this without thinking, without the careful exercise of my intellectual and reasoning faculties, superior to all the powers of mechanism; and thence I infer it is as impossible for them to practise the same discourse or conversation, without the powers of a rational and intelligent spirit, which, in its own nature, is neither material nor mortal.

Let the question, therefore, which relates to brute creatures be determined to any side, it does not at all affect the nature, the reason, or the religion of mankind. It is beyond all doubt, that man is a creature which has an intelligent mind to govern the machine of his body, that man has knowledge, and judgment, and free choice; and unless he approve his conduct to the eyes of his Creator and his Judge in this state of mortality and trial, he exposes himself to the just vengeance of God in his future and immortal state.

It is certain, that the all-wise and all-righteous Governor of intelligent creatures, will not appoint the very same fate and period to the pious and the profane; neither his wisdom, his equity, nor his goodness, will suffer him to deal out the same blessings and the same events in every state of existence, to those who have loved him with all their souls, and those who have hated and blasphemed his name. It is the glory and

the interest of the supreme Ruler of the universe, to make a conspicuous and awful distinction, in one world or another, between those who have endeavoured to serve him, and to render his majesty honourable among men, and those who have impiously abused all his favours, ridiculed his thunder, and robbed him of his choicest honours. But if philosophy should fail us here, if it were possible for creatures of such different characters to have nothing in their own natures which was immortal, yet it is a very reasonable thing, that the great Judge of all should prolong their beings beyond this mortal state, that the sons of vice might not go triumphant off the stage of existence, and that the men of virtue might not be always oppressed, nor come to a period of their being, without some testimony of the approbation of the God that made them.

ESSAY X.

OF SUN-BEAMS AND STAR-BEAMS.

SECTION I.

IS THE ETHER BEYOND OUR ATMOSPHERE A MERE VACUITY?

ANSWER.

NO; by no means: For there is not one minute spot in all the solar system, where the pupil of an eye might not be placed, and see a hemisphere of stars. Suppose the visible stars to be no more in number than the ancients counted them, *viz.* a thousand and twenty-six, or, for the sake of a round number, one thousand only; yet the other stars visible to the naked eye, together with those which are visible by a telescope, would amount at least to many thousands more. Suppose between the least of these telescopical stars, and the visible stars of the first magnitude, the apparent difference be no greater than that of one to a hundred: Suppose again, that from the least of these stars but one single ray came to one eye, then from the biggest star there must proceed a hundred rays: This would multiply the rays of all the stars in a hemisphere, which came to each eye with sensible notice, by the assistance of a telescope, at least to a hundred thousand, without standing to make a nice computation. What millions of millions of star-beams then must be for ever passing through the ethereal space, to be able to meet every eye placed in any part of this vast sphere of our world, if there be not a spot upon it so big as the pupil of an eye, but must admit of so many thousand beams! What infinite rencounters and decussations, meetings and crossings, through all the parts of our solar system!

Next, let us suppose each of these pupils were turned inward toward the sun: Each will meet with a far greater number of beams of light from the sun, in such a proportion as the full blaze of day is superior to the glimmering light of the star-beams. The vast addition of rays from the sun does almost infinitely increase the rencounters and decussations: Sun-beams and star-beams, ever meeting in innumerable myriads throughout the ether of our solar world: Since we have allowed that there is not a spot in it whence a hemisphere of stars might not be seen by night, and whence also we may not see a hemisphere of blazing day-light.

Let it be remembered also, that these motions of the particles of light, both from the sun and stars, are and have been incessant ever since the creation, both by night and day: For our night and day are only distinguished by the little globe of our earth turn-

ing its different sides toward the sun, which is an inconsiderable thing in the vast solar world, or planetary system. The reason why we do not discern the stars by day, being only the superior quantity and force of the sun-beams striking the eye, whereas the star-beams strike also constantly, but so feebly as not to be noticed: And the reason why we do not see the sun by night, being the interposition of the earth, and the sun-beams that go beside the earth, fly from our eyes, and not toward them: But the same quantity of sun and star-beams are perpetually flowing through the ether in every minute part of it, except only those few places where the planets or their satellites intercept them, and stop their motion.

Now the corollaries that may be drawn from these suppositions are,

1. That since light is a body, which has been sufficiently proved by its reflections and refractions, &c. the ether is not so void a space as perhaps some have been ready to imagine, since there is not a minute spot in it, wherein there are not many thousand bodies always moving with prodigious swiftness all manner of ways. And it may be inquired whether the planets, moving through such a fluid, would not, by degrees, be retarded in their courses; but the next corollary perhaps may answer it.

2. How amazing must be the subtlety and smallness of the rays, which have been shooting from the sun and stars for almost six thousand years, and yet no sensible addition is made to the bulk of our globe, where they seem to be all lost, nor any sensible diminution of the sun or stars whence they all proceed? And if these corpuscles which compose this wondrous thing called *light*, are so inconceivably small, and the body be so rare, perhaps the planets may pass through it without sensible retardation. And yet Dr. E. Halley has told us, in *Miscellanea Curiosa*, p. 59, he thinks he can demonstrate, that the opposition of the ether to the motion of the planets in long time becomes sensible.

3. What a surprising work of God is vision, that notwithstanding all these infinite meetings and crossings of star-beams and sun-beams night and day, through all our solar world, there should be such a regular conveyance of light to every eye, as to discern each star so distinctly by night, as well as all other objects on earth by day? And this difficulty and wonder will be greatly increased by considering the innumerable double, triple, and tenfold reflections and refractions of sun-beams, or day-light, near our earth, and among the various bodies on the surface of it. Let ten thousand men stand round a large elevated amphitheatre; in the middle of it, on a black plain, let ten thousand white round plates be placed, of two inches diameter, and at two inches distance; every eye must receive many rays of light reflected from every plate, in order to perceive its shape and colour; now, if there were but one ray of light came from each plate, here would be ten thousand rays falling on every single eye, which would make twenty thousand times ten thousand, that is, two hundred millions of rays crossing each other in direct lines, in order to make every plate visible to every man. But if we suppose that each plate reflected one hundred rays, which is no unreasonable supposition, this would rise to twenty thousand millions. What an amazing thing is the distinct vision of the shape and colour of each plate by every eye, notwithstanding these confused crossings of rays! What an astonishing composition is the eye in all the coats and all the humours of it, to convey those ten thousand white images, or those millions of rays so distinct to the retina, and to impress or paint them all there! And what

further amazement attends us, if we follow the image on the retina, conveying itself by the optic nerves into the common sensory without confusion? Can a rational being survey this scene, and say there is no God? Can a mind think on this stupendous bodily organ, the eye, and not adore the wisdom that contrived it?

SECTION II.

DOTH THE WORLD GROW BIGGER OR LESS?

Let us suppose, according to modern philosophy, that the universe is of vastly larger extent and compass, than ever our ancestors imagined, and that each of the innumerable multitude of stars is a sun to some system of planetary worlds, which are continually rolling round it: Yet I now take it for granted, that the number of these stars is not actually infinite; for the number of the star-beams would be almost infinitely greater than infinite; besides other absurdities, which I think would follow from the supposed infinity of the universe. We will determine therefore, at present, without further debate, that it must have some limit: Now this limit must be either some hard and capacious body, including the whole world, as in a box, or a hollow sphere, restraining the particles of light from a further progress, or else it must be the actual agency of the power of God, confining the utmost star-beams in their flight, and saying, *Hitherto shall ye go, and no further.*

The reason I give for it is this, *viz.* If a star-beam, or the light of one of the outermost stars continues its motion in a direct line from the star to the present limit of the universe, and be not powerfully stopped and confined there by some solid body, or the almighty will of God, it will move onward infinitely in the void space in a direct line, according to the first law of motion, *viz.* That a body moving will ever move in a direct line onward, unless some other being divert or restrain it. Thus the universe would be for ever enlarging its bounds, as the light proceeds further in its progress, and gain upon the void space: The world would be for ever growing and increasing its extent without end. And what is said here concerning one star, may be asserted concerning our sun and every star, and the greatest part of the rays they send forth.

And if light move so swiftly as to pass through one hundred and fourscore thousand miles in the second of a minute, as modern philosophy asserts, with what a prodigious speed must this world increase its extent, and be for ever increasing it?

Now if these star-beams have been moving through the infinite void with such an astonishing swiftness ever since the world has been created, *i. e.* at the rate of one hundred and fourscore thousand miles in the second of a minute, what prodigious expansion has the universe arrived at, if according to Moses we count the beginning of all things to have been but six thousand years ago? But if the Mosaic history of the creation has regard only to our earth, or to the planetary system of our sun, then, for ought we know, the universe might be created sixty thousand or six hundred thousand years ago; and how amazingly must it be dilated by such a supposition, yet continually enlarging its bounds, and gaining upon the boundless void?

As the universe upon this supposition will be for ever enlarging its limits, so it will

be for ever diminishing its solid substance, till in time the lucid bodies are in a great measure wasted away, or at least till the luminous atoms are all fled away and gone: And then, not only the planets, but whatsoever more of solid matter remains in the stars also, will be buried in eternal darkness: And if the world had been eternal, as some persons have imagined it, it must have been long ago reduced by this means to universal midnight and desolation.

I can think but of one objection to be raised against this way of reasoning, and that is, that gravitation toward the stars or their planets would withhold these atoms of light, these luminous rays, from such a prodigious and eternal excursion into the infinite void.

But may it not be answered, that since gravitation could not so restrain the motion of these bright atoms, these star-beams, when they were much nearer to the star and its planetary worlds, but that light, when it was emitted from the star, fled with such a prodigious swiftness, even to so vast a distance, can it be supposed that gravitation will have so much influence as to stop its motion, when it is arrived at this vast distance from the star and all its planets?

Yet after all, I know it may be replied again, that gravitation is a power which is not limited in its agency by any conceivable distances whatsoever; and therefore when these star-beams are run out never so far into the infinite void by the force of their first emission from the star, yet their gravitation towards the star, or some of the planetary worlds, which sometimes perhaps may be nearer to it, has perpetual influence to retard their motion by degrees; even as the motion of a comet is retarded by its gravitation towards the sun, though it flies to such a prodigious distance from the sun; and in time it is stopped and drawn back again and made to return towards its centre. And just so may we suppose all the sun-beams and star-beams that ever were emitted, even to the borders of the creation, to have been restrained by degrees by this principle of gravitation, till moving slower and slower, at last they are stopped in their progress and made to return toward their own, or some other planetary system. And if so, then there is a perpetual return of the beams of light, towards some or other of their bright originals, an everlasting circulation of these lucid atoms, which will hinder this eternal dilatation of the bounds of the universe, and at the same time will equally prevent the wasting of the substance of the lucid bodies, the sun or stars.

Well, but if this power of restraining and reducing the flight of star-beams be ascribed to this principle of gravitation, let us inquire what is this gravitation, which prevents the universe from such a perpetual waste of light? It cannot be supposed to be any real property or natural power inhering in matter or body, which exerts its influence at so prodigious a distance. I think therefore it is generally agreed, and with great reason, that it is properly the influence of a divine power upon every atom of matter, which in a most exact proportion to its bulk and distance, causes it to gravitate towards all other material beings, and which makes all the bulky beings in the universe, *viz.* the sun, planets, and stars, attract the bodies that are near them towards themselves. Now this law of nature being settled at first by God the Creator, and being constantly maintained in the course of his providence, it is esteemed as an effect of nature, and as a property of matter, though in truth it is owing to the almighty and all-pervading powerof God, exerting its incessant dominion and influence through the whole material creation,

producing an infinite variety of changes which we observe among bodies, confining the universe to its appointed limits, restraining the swift motion of the beams of light, and preserving this vast system of beings from waste and ruin, from desolation and darkness. If there be a world, there is a God: If there be a sun and stars, every ray points to their Creator; not a beam of light from all the lucid globes, but acknowledges its mission from the wisdom and will of God, and feels the restraint of his laws, that it may not be an eternal wanderer.

But I call my thoughts to retire from these extravagant rovings, beyond the limits of creation. What do these amusements teach us, but the inconceivable grandeur, extent, and magnificence of the works and the power of God, the astonishing contrivances of his wisdom, and the poverty, the weakness, and narrowness of our own understandings, all which are lessons well becoming a creature?

ESSAY XI.

ON SOME METAPHYSICAL SUBJECTS.

SECTION I.

OF NATURE AND ESSENCE.*

THE nature or essence of any being consists in an union of all those things, whether substances, or modes and properties, which are necessary to make that thing be what it is. So it is the nature of a triangle to have three lines so joined as to make three angles; and the nature of a spirit to be a thinking self-subsisting being; even as extended solid substance is the nature of body: It is the nature or essence of a grove to be a spot of ground thick set with trees, and the nature of man to be a spirit united to an animal of such a particular shape; and it is the nature or essence of a rose, to be a flower whose leaves are of such a special figure and such a beautiful faint reddish colour, with such a peculiar smell, as are all united in the plant to which we give that name.

The nature of a thing, by philosophers, is called its essence; and a thing may be said to have an essence, or nature, when it is not actually in being, if the mind of man can clearly conceive it as possible to be; so, An English rose in January, Snow in Guinea, or An innocent man on earth, may be said to have an essence among the nature of things, though perhaps there are not such things actually in being.

Note, The essence of mathematical beings, which are but a sort of abstract ideas, are eternal and immutable, and may be said, in the language of the schools, to consist in an indivisible point; for if a square, a triangle, or a circle, want the least part, or degree, of its perfection, it fails of some of the properties of that figure, it loses its nature, and ceases to be that figure.

But the essences of natural beings, as well as artificial or moral, are not so immutable as philosophers have formerly thought them; nor do they consist in an indivisible point; for natural beings are not ranged by God or man into distinct species, or kinds, so very exactly, that if any of the ideas which go to compose the essence of any particular kind of being be never so little varied by addition, diminution, or alteration, it destroys that kind, and makes it something else.

Ancient scholastic writers, indeed, were almost universally agreed, that all natural beings are thus exactly distributed into distinct species, and that each hath its own indivisible and unchangeable essence: But in our age we are taught to philosophise

* *Note*, This Essay is little more than an amplification of the second chapter of the Sketch of Ontology, written when the author had some thoughts of composing a larger system of that science.

with more caution on this subject; and that great genius Mr. Locke has done much toward teaching us. We use the word species, to signify a rank of beings, in each of which we find a collection of those ideas united, which we call its nature or essence, and which we usually join together under one name, and make that stand for the name of a species; so we call one set of creatures men, another monkeys; some are named beasts, and others birds; this metal is gold, that is silver, and the other is lead, according to the different ideas which we have joined together to make up each of these species or kinds in our way of thinking and speaking.

Now in many things it is evident, that by dropping or diminishing some of those ideas which are usually called essential, and by adding or altering others, there may be a considerable change made in some individual being, and yet we range it still in the same species and give it the same name. We usually suppose four feet and a tail, and a power of barking, to be essential to a dog; but suppose a dog had neither a tail nor a tongue, do we call it a dog still? Or if the beast should be a little monstrous, and should have five feet, would it cease to be a dog?

But if these ideas, which we usually call essential, should be very greatly changed, thence there would arise so great a variation from what we call one kind of beings, and such an approximation towards another, that it may sometimes be very hard to know under what kind or species to rank the being in question, and what general name to give it. This is very easy to conceive in things moral or artificial. 1. In moral ideas: The will of a parent may be manifested to a son in such a soft and persuasive sort of language, that it is hard to say whether it must be called a counsel or a command. A voluntary action may have so many circumstances in it, both good and bad, that it may be a difficulty to determine whether it is virtuous or vicious, lawful or unlawful. 2. In things artificial: A hat and a cap are different kinds of coverings for the head: A hat has brims all round, a cap has not: Yet the brims of the hat may be so lessened by degrees, or cut into such a shape, that you would not know whether to call it a cap or a hat. The same gradual change may be made in a chair or stool, by lessening or enlarging the back of it. And so in a garden or orchard, by multiplying or diminishing the number of fruit-trees.

And why may we not suppose that natural beings are, in some measure at least, left under the same sort of uncertainty? A tincture of gambogia is yellow; add a small tincture of ultramarine to it, and it becomes doubtful whether it is yellow or green: Put in several more degrees of ultramarine, so as to overwhelm the gambogia, and the yellow is quite lost; it is a doubt then whether it be green or blue. The gold of Africa and that of the East Indies usually differ in their colour, one being more ruddy than the other: Perhaps a few more degrees of redness, with a small alteration of the weight, might make a chymist doubt whether it were gold or no. Silver and baser metal are sometimes so intermingled in the mines, that it is hard to say whether this clod be true silver ore. So by different graftings and artful unions of different kinds of trees, the fruit thereof may so much change its qualities, as to be ranked under a new kind, whether of pears or apples, &c. Nor are instances wanting amongst animal beings: A creature may be born so monstrous, with so many parts or properties like a man, and so many like a monkey, that we may be at a loss whether to call it a monkey or a man: And much more may such a thing happen in the species of horses and asses, dogs and foxes: And

there is a creature which we call a bat, which we doubt whether to place among the species of birds or beasts.

Yet it must be granted, that natural beings, which are the works of God, have, or seem to have, something more of a regular and constant limitation of their essences than moral or artificial beings, which are the works of man. God the Creator, in the course of his providence, generally keeps up the successive production of natural beings, whether meteors, metals, plants, or animals, in such a regular uniformity, as to establish and maintain such constant and real boundaries of their different species, as are sufficient for all the uses of the natural world, and for the purposes of human life; and therefore, in all ordinary cases we may say, that God has given boundaries to the different species of natural things; but the hints which have here been given, do also sufficiently prove the falsehood of that axiom of the schools, *viz.* "That all natures or essences of things are unchangeable, or that they consist in an indivisible point," and that other axiom also "That in essences there are no degrees." See what is written on this subject in *Logick*, Part I. Chap. VI. Sect. 6. And Mr. Locke has discoursed on this subject very copiously, in his *Treatise of the Human Understanding*, Book III. Chap. III. IV. V. and VI. where he seems to make the ranging of all beings into different species, to be only the work of the mind of man, and that the essences of all things, as we distinguish them, are mere nominal essences. So far as I can recollect his sentiments, he scarce allows any more real and established bounds of distinction between the essences of different kinds of natural beings which God has made, *viz.* lions, snakes, apples, roses, or sun-beams, than there are between the essences of moral beings, or ideas, which the minds of men form, such as murder, theft, idolatry, government, or the artificial beings which their hands produce, such as houses, pins, and paper. Whether some of his expressions on this subject be not a little too strong, let the learned inquire and determine, since it is granted, that the essences and species of natural beings are generally kept sufficiently distinct by the God of nature.

SECTION II.

OF MATTER AND FORM.

The nature of every particular body consists of matter and form. We need not change the terms of the old philosophy, but there is great need of mending the sense of them.

The matter of body is the solid extended substance of which it is made, which seems to be uniform, and the same in all bodies. If the Aristotelians meant nothing else by their *materia prima*, they have dressed up their sentiments very oddly.

The form of each particular body is the combination either of those primary and real qualities, or of those secondary and sensible qualities, or of both together, which belong to that body, and make it be what it is: And thus far we may agree with the definition of the schools, *Forma est id per quod res est id quod est.*

The primary or real qualities are that particular shape or figure, and that size or quantity, with those degrees of motion or rest, and that situation, both of the sensible and imperceptible parts of it, as is proper only to that kind of body, and belongs to no other.

The secondary or sensible qualities of a body are its particular colour, taste, smell, coldness, heat, hardness, &c. It is from the different modifications and dispositions of these primary qualities, *viz.* shape, motion, quantity, situation, &c. that all the secondary or sensible qualities arise, such as colour, taste, weight, hardness, &c. whereby we commonly distinguish most bodies of different kinds from one another.

In some bodies, indeed, any sort of matter with such a particular and determined outward and visible shape and size, is sufficient to make up the nature and essence of them, or to make those bodies be what they are; as for instance, any sort of solid extended subtsance with a figure every way round, is the matter and form of a ball, or globe, without regard to its sensible qualities of colour, hardness, &c. Any building, of whatsoever materials, if it be framed and fitted for men to dwell in, is called a house; any long piece of matter bent round like a hoop, may be called a ring, and any small open hollow vessel to wash our hands in, may be called a bason.

In other bodies there must be such a particular inward contexture of the parts, that is, such a peculiar shape and situation, and intestine motion or rest of the small invisible and imperceptible particles of matter of which it is composed, to complete the nature of them, and to give them those sensible qualities of colour, hardness, &c. and to make them be what they are. This is required in the bodies which we call water, quicksilver, gold, wood, or clay; but it is no matter what the outward and gross shape of them is, for that makes no difference, nor belongs to the nature of them.

But in other bodies there must be both the outward visible figure, as well as the inward shape, situation, rest or motion, and fermentation of the imperceptible solid or fluid parts to compose the nature of it, or make it be what it is; this is evident in a gold ring, a rope, an egg; and the same is true of all plants and animals, as a rose, an oak, a horse, an eagle.

It is granted, that the sharpest understanding can penetrate but a very little way into the nature and essences of natural beings and the special forms of them, in the present state; we know and distinguish the bodies that are round about us by their outward figures and sizes, and by their sensible qualities, by their effects upon our senses, and their sensible operations upon one another, much more than we do by any of the figures or intestine motions of those little imperceptible atoms and particles of which they are composed, for these being invisible to us for the most part, lie out of the reach of our knowledge. And therefore our description of natural bodies is much more drawn from their sensible qualities.

The matter of which a body is made, is either proxime or remote: The proxime matter of which a house is made, is bricks, tiles and mortar, beams and rafters, boards and nails. The remote matter is clay, sand and lime, trees and iron; and they are called remote, because bricks and tiles are made of clay, mortar is made of sand and lime; beams, rafters, and planks are cut out of trees, and nails are formed of iron. The proxime matter of a book is its leaves printed with words, bound up in covers; but paper and printer's ink are the remote matter of it, together with pasteboard and leather.

Note, Matter and form have been, by the Aristotelian philosophers, generally ranked amongst the causes, and treated of there, but without any just reason; yet they may be justly called the constituent principles of things, though they are not proper causes.

Note, Matter and form are words which have been transferred from corporeal beings

to several other things which relate to the intellectual world, with some analogous or kindred signification; the matter of the science of anatomy, or that about which it converses, is the body of man; the form is a skilful dissection and knowledge or description of the several parts of the body, their proper figure, situation, and design. The matter of a sermon is any theme in divinity, suppose it be the worship of God, or love to man, the evil of sin, the redemption of Christ, or the glory of heaven: The form of the sermon is that particular manner, both in regard to sense, order, and style, in which the preacher treats of those subjects, whether it be in propositions, doctrines, reasons, inferences; whether it be in a way of argument or harangue; whether in rude or polite language.

From the various application of these terms, matter and form, proceeds that old and famous distinction of material and formal, which is usefully applied to a thousand various subjects; thus the river of Thames is formally the same as it was in our grandfathers' days, because it runs between the same banks, but materially it is very different, for, perhaps, there is not a drop of the same water. Thus Dryden's and Ogilby's Virgil are materially the same, because they are English translations of the same Latin poet; but considered formally, they are exceedingly different, *i. e.* as to the elegance of the verse.

SECTION III.

OF THE DIFFERENT SENSES OF THE WORD NATURE.

Having spoken of the nature of particular beings, which consists in a collection of those things which make it be what it is, it is proper also to observe, that the word "nature" sometimes is so limited, as to signify any one particular attribute or property of a being, as it is the nature of a dog to bark, and of fire to burn.

Sometimes it is so far enlarged, as to denote the whole world, or the universe of things; as, when we speak of a centaur or griffon, and say there is no such thing in nature.

Sometimes also the word "nature" is taken for the necessary and eternal order and connection of things in idea, and the unchangeable relations of them to each other. So we say, it is according to the nature of things, that creatures are mutable, that three and three make six; or that two mathematical circles can touch each other but in a point.

We call also those laws, which God the Creator has established in the world for the management of the grand scheme of his providence, by the term of "nature;" and indeed many times we do not enough distinguish them from the abstracted reason of things, and their necessary and eternal relations. In this sense we say it is natural for a stone thrown up to fall back towards the earth again, for cork to float in water, and for gold to sink: It is natural for the earth to be carried round the sun in three hundred and sixty-five days, and for the sun to enliven the vegetable and animal world. We say also, it is natural for the soul of man to move his limbs by a volition, or to have a perception of white when he turns his eyes towards the snow. In all these things we use the word

"natnre" for thosc settled rules by which the powerful will of God governs his creatures: And it is only in this sense "nature" stands in opposition to "miracle," for it is in this sense only that God can change the natural course of things by miraculous influence.

The term "nature" stands also for the principles of reason within us. By nature we learn that there is a God, and that man is not his own maker. The same word nature also signifies the eternal fitness or unfitness of things, and their moral relations as well as natural: And in general it means the spring and foundation of all those duties which reason teaches us; so we say, it is a law of nature that God must be honoured, contracts ought to be kept, gratitude is due to benefactors, and compassion must be shewn to the distressed.

It is in this sense that nature is usually distinguished from revelation, as when we say, man by naturc may be taught to worship God, but it is only revelation can teach him that God will be worshipped by a Mediator.

SECTION IV.

OF CREATION OR CONSERVATION.

It has been a very famous question in the schools, Whether conservation be a continual creation, *i. e.* whether that action, whereby God preserves all creatures in their several ranks and orders of being, is not one continued act of his creating power or influence, as it were, giving being to thcm every moment? Whether creatures, being formed out of nothing would relapse again into their first state of nonentity, if they were not, as it were, particularly reproduced by a creating act of God? Now there is one plain and easy argument, whereby perhaps this controversy may be determined, and it may be proposed in this manner.

In whatsoever moment God creates a substance, he must create with it all the properties, modes, and accidents which belong to it in that moment; for in the very moment of creation, the creature is all passive, and cannot give itself those modes. Now if God, evcry moment, create wicked men and devils, and cause them to exist such as they are by a continued act of creation, must he not, at the same time, crcate, or give being to all their sinful thoughts and inclinations, and even their most criminal and abominable actions? Must he not create devils, together with the rage and pride, the malice, envy, and blasphemy of their thoughts? Must he not create sinful men in the very acts of lying, perjury, stealing, and adultery, rapine, cruelty, and murder? Must he not form one man with malice in his heart? Another with a false oath on the tongue? A third with a sword in his hand, plunging it into his neighbour's bosom? Would not these formidable consequences follow from the supposition of God's conserving providence being a continual act of creation? But surely these ideas seem to be shocking absurdities.

Whereas if conservation be really a continued creation, the modes must be created together with their substances every moment; since it is not possible that creatures, who every moment are supposed to be nothing but the immediate products of the divine will,

should be capable, in every one of those very moments in which they are produced or created to form their own modes in simultaneous co-existence with their subjects.

I own there are difficulties on the other side of the question; but the fear of making God the author of sin has bent my opinion this way. We must always inviolably maintain it, for the honour of the blessed God, that all spirits, as they come out of his hand, are created pure and innocent: Every sinful act proceeds from themselves, by an abuse of their own freedom of will, or by a voluntary compliance with the corrupt appetites and inclinations of flesh and blood. We must find some better way therefore to explain God's providential conservation of things, than by representing it as an act of proper and continual creation, lest we impute all the iniquities of all men and devils in all ages, to the pure and holy God, who is blessed for evermore. Amen.

ESSAY XII.

REMARKS ON SOME CHAPTERS OF MR. LOCKE'S ESSAY ON THE HUMAN UNDERSTANDING.

SECTION I.

OF SENSIBLE QUALITIES, AND PARTICULARLY OF COLOUR.

IT is now universally agreed among all men of reasoning and philosophy, that the sensible qualities, such as colours, sounds, smells, &c. are not really inherent in the bodies themselves, such as we perceive them, but are mere ideas arising in the mind from the different impressions made on the senses. This is excellently explained and proved beyond contradiction by Mr. Locke, in his Second Book, Chap. VIII. But I have found one argument more for the same truth, which I think is equally strong, and yet different from all his.

One considerable reason, that will prove colour, as well as other sensible qualities, not to be really inherent in the bodies themselves, is this; that in order to the perception of different objects, or their different sensible qualities, the external organs of sense must be struck or moved in a different manner by those objects. The way whereby we perceive variety of distinct colours, is by the variety of impressions that are made upon our optic nerves, by the rays of light reflected from coloured bodies; these rays of light being reflected in various and different manners, require that the surfaces of these bodies which reflect them should be really different from each other, and be composed of particles of divers figures or sizes, situations or motions, for otherwise they could not reflect the rays of light in different manners; nor can any distinction be made in the several impressions of red and green objects on the eye, through the common medium of air, but what arises from the various shapes and sizes, and the dispositions of the particles that compose the surface of a red or green body; because these little particles must variously reflect the various and different rays of light to our eyes. If, therefore, bodies of divers colours be distinguished by our sight, it must be by the distinct impressions their surfaces make by the rays of light on the eye; for a mere inherent quality, or a supposed teint or dye in the bodies themselves would not diversify the reflections of light, nor do any thing towards it, if the surface of those bodies were of the same configuration of particles. It is plain that we might have the same impressions made on our optic nerves, by various coloured bodies, if these colours were only inherent teints, and had no other difference in their surfaces. The like may be said of all other sensible qualities, *viz.* the variety of odors, sapors, and sounds; for if all these were only a sort of inherent qualities, such as we perceive them, the surfaces of these several bodies might be the same as to the figure, size, and texture of the said particles that compose them, and consequently they would make the same uniform impressions on our organs of

sense, and raise the same uniform sensations; and we could never distinguish these things which we call sensible qualities, *viz.* the different tastes, smells, &c. of different bodies. All these therefore must arise from the different configurations, &c. of the particles of these different bodies; for nothing else can excite different impressions on our senses.

Shall it be objected here, that Sir Isaac Newton has found by experiment, that the rays of light themselves are different, according to the various colours which the eye perceives? What need is there then of any difference in the surfaces of objects?

I answer, That the rays of light differ, according to Sir Isaac Newton, in the degrees of their refrangibility; and objects of all colours would reflect the same rays, and in the same manner, if the surfaces of all coloured objects were the same: There must be something therefore in the surface of different coloured objects, more suited to reflect these different rays to the eye; and that object is called red, which reflects the red-making rays, others blue, others yellow, &c.

It is confessed indeed, where a prism separates the different sorts of rays, and throws, for instance, only the red-making rays upon a yellow body very plentifully and strongly, this yellow body in such a situation will appear red, because there are few other rays for it to reflect: But when red, blue, yellow, green, and purple bodies are placed in common light, the surfaces of each of them will reflect to the eye only, or chiefly, their own sort of rays, by virtue of their own different surfaces, and thus distinguish their own colours.

Another argument which Mr. Lee uses in his notes on Mr. Locke, is this, that there are many things which appear of different colours at the same time, only by their different situation to the light, or the different position of the eye. So glasses, cut diamonds, bubbles, silks, pictures, &c. which prove that colour is not a tincture really inherent in them; but so far as it is in the bodies, it is only a particular texture or disposition of the particles of the surface, suited to make different reflections of light to the eye, according to its various positions in relation to the coloured body.

But it must be confessed, Mr. Locke's chapter on this subject is admirably well written, and worthy of diligent perusal and study by every young philosopher.

SECTION II.

OF SUCCESSION AND DURATION.

Mr. Locke's doctrine of succession and duration proceeding from the train of ideas in our minds, is new and ingenious; but his second argument for it, contained in the beginning of the fourth Section, and taken from that opinion of his, that the mind doth not think in sleep, I cannot approve of; and I think that the middle of that section does rather effectually prove the contrary position: For while a man is very intent upon one idea, he discerns not the succession of so many moments, as if his ideas had been often varied; and since it comes to pass that in sleep we cannot recollect our ideas, but they vanish for the most part as soon as they are formed, it follows, that our ideas of that duration must be very short, since we are so far from recollecting any variety of ideas in that season, that we can scarce believe by mere recollection, that we had any ideas

at all at that time: And I am persuaded, should a man all at once lose the memory of what he had done this last week or month, so that the ideas which he had a month past, or the actions that he then did, were the freshest in his recollection, it would scarce appear to him that those last actions or ideas were above a few days old; so that the immediate vanishing and disappearance of our sleeping ideas may be as much to the purpose in this sentiment about duration, as though our sleep had no ideas at all.

Mr. Locke's conjecture, that the train of ideas do succeed one another at certain distances of succession, which cannot be much delayed or hastened, I must acknowledge to be an ingenious thought, and a pretty method of accounting for the original of our notions of duration and succession: And perhaps it may be the reason why motions exceeding swift, or exceeding slow, are not perceived by our senses, of which Mr. Locke speaks, Book II. Chap. XIV. Sect. 9, 10, 11. But here, as in many other places, he avoids distinguishing what part the animal spirits or bodily powers may have, and what the mind, in this succession of ideas, which perhaps might solve this question with more evidence.

What if we should conceive thus, *viz.* that it may be possible for a mind to have ten successive ideas in a separate state in the time wherein it hath but one, when it is in union with this body? The fibres of the brain, which subserve any of the operations of the soul, and the filaments of the nerves, which reach to the outward organs of sense, lying between other fibres or filaments, or fleshy parts, can be moved but to a certain limited degree of swiftness; and consequently those motions of bodies which are swifter than it is possible for those fibres to be moved, cannot be discerned or distinguished: But they appear like a long line quiescent rather than a short body moved, as a swift arrow, or the fly of a jack. And as for exceeding slow motions, as the hand of a watch, it makes no impression of its motion at all upon the outward organs of sense, or at least so very weak an impression as that it is not communicated distinctly to the inward fibres of the brain, or common sensorium, wheresoever that be; and consequently the soul can have no sensation or idea of it: Thus the motions, which are exceeding swift, or exceeding slow, are not distinctly discerned. But in a separate spirit, or in a spirit united to such matter whose motions might be much swifter than the fibres of our nerves or brain, it may be possible for us to have many successive ideas in the time wherein now we have but one. And then the duration, or time, might be measured by those spirits, by the usual swiftness of the succession of their ideas, as well as ours are now, where the usual succession is more slow.

SECTION III.

OF INFINITY.

In this seventeenth chapter of infinity, Mr. Locke is exceeding large, because it is a notion that has been the spring of so many long and endless debates among the learned, and therefore he is pardonable, if by a repetition of the same things in copious language, he endeavours to impress his thoughts upon our minds: His notions of infinite as an ever growing, and not a positive complete idea, are of admirable use to stop and put an end to

those wranglings about infinity, in time, extension, swift and slow motion, division, number, &c. which have abounded among some writers. And let us chiefly make this use of this consideration of infinity, *viz.* to shew us how very narrow and bounded our understandings are, and with what an awful sense of the weakness and frailty of our own thoughts and judgments we should reason about an infinite God and his infinite affairs.—We, finite limited beings, soon lose ourselves among infinites, whether great or small, till we retreat within our own bounds, and reason upon things which are made for our grasp of thought. The great incomprehensible Being has reserved perfect positive infinity to himself; and though there may be some positions determined with justice and certainty about it, yet the less we mingle it with our arguments, we are perhaps the more secure from error.

SECTION IV.

OF POWER.—BOOK II. CHAP. XXI.

Mr. Locke, in his twenty-first Chapter of the second Book concerning power, Sect. 4, supposes that the idea of active power is much more borrowed from spirits than from bodies, and is far better derived from the mind's reflection on its own operations, and its command over the body to put the limbs of it in motion, than it can be from any external sensation, whereby we behold one body having peculiar influences over other bodies, to make changes in them, or to put them into motion; and one reason that he gives for it is, "That when one body, *viz.* a ball, puts another ball into motion, it only communicates to it the motion it had received itself from some prior moving body, and loses in itself so much as the other received; which thing gives us (says he) but a very obscure idea of an active power in body, whilst we observe it only to transfer, but not to produce any motion."

I will not here stand to contest it, whether the clearest idea of active power be derived to men and philosophers from bodies or from spirits: But I am very apt to think in children it may be derived much more from their sensation of bodies moving bodies, than from their reflection of any act of their spirits; for when they see a fire burn wood, or their own hands put a ball into motion, or the wind shake the trees, they have as easy and as clear an idea of a power in the wind to shake trees, in their hand to move a ball, or in the fire to burn wood, as any ideas of active power which they derive from the agency of their own wills upon their own limbs.

The query which I beg leave to put in this place, is, Whether that opinion be true, which Mr. Locke here supposes, and which is a famous principle in the Cartesian philosophy, *viz.* That one body can communicate no more motion to another, than that which is in itself? The difficulty I would propose is plainly represented in this instance: Suppose a town built with many fair houses and churches, each of them adorned with spires and many ornaments, should be undermined, or have the cellars of it filled with barrels of gunpowder, which have a mutual communication with each other through all the town; and suppose a single spark of fire should fall into one of those barrels; the question is, Whether all the dreadful convulsion and ruin of those buildings, together with the thundering sound that shall be heard for twenty or thirty

miles round, be not a proof of a prodigious quantity of motion communicated to the stones, timber, tiles, bricks, and all the materials of those edifices, and to the surrounding air, by that spark of fire, more than could possibly be contained in that single spark? And how can this problem be solved upon this principle? Or rather, Does not this instance prove the falsehood of that Cartesian opinion?

SECTION V.

WHETHER LIBERTY CAN BE ASCRIBED TO THE WILL.

The author, in the sixth, seventeenth, nineteenth, and twentieth Sections, ingeniously declares, and proves, the understanding and will not to be two beings distinct from the mind or soul itself, though they are usually called two distinct powers or faculties; which manner of speaking, though it be almost necessary in some cases, and has great conveniency in it, yet I cannot but assent to Mr. Locke's complaint, that it has perhaps been one occasion of leading mankind into some mistaken conceptions about the several actings of the mind of man.

But, amongst the rest, he supposes this also to be a mistake, That we ascribe liberty to the will; for since, argues he, the will is a power of the man to determine his own actions, and liberty is also a power of the man to act or not to act, &c. both these are properly powers of the man, and one power cannot be ascribed to another, nor liberty ascribed to the will.

And he supposes us guilty of the same mistake, when we say, the understanding directs the will, or the will obeys the understanding, for they are two powers of the man, which have not an agency or operation upon each other, since operation, saith he, belongs only to agents, or real beings, and not to powers. All these agencies of powers on each other, therefore, he roundly denies, Sect. 17, 18, 19, and says, that the power of thinking operates not on the power of choosing, nor the power of choosing on the power of thinking.

But I beg leave to observe, that this operation of one power on another, is the common way of thinking and speaking amongst men, with regard to the powers of the body, as well as those of the mind, nor do I know any impropriety in it, nor any reason why it should be altered. When the author speaks of the faculties of the body, he names the digestive and expulsive faculty; and is it not proper to say, that in an animal, the digestive power operates upon the expulsive, and assists it in its operation? May we not say also, that the masticative, or chewing faculty operates upon the digestive, and accelerates it in its digestion, without supposing these faculties to be real and distinct beings, different from the body? So, in his other instance of singing and dancing, why may we not say, that *Apollo*'s power of singing or music operates on *Lesbia*'s power of dancing, since she dances according to his notes of music? And is it not proper to say, That the power of thinking, whereby I perceive a thing to be good, operates upon the power of choosing it? Or the power of choosing or willing, operates on the power of thinking, when I set myself to think on any particular subject by my volition or choice for an hour together.

Now Mr. Locke's design in all this denial of such attributions to a power, is, as I hinted before, to support his assertion, "That liberty or freedom belongs not to the will;" and therefore he supposes it is as unreasonable and unintelligible a question to ask, Whether a man's will be free or not, as it is to ask, Whether his sleep be swift, or his virtue square; for liberty, which in his sense is but a power to act or not to act, belongs only to agents, and cannot be an attribute, or modification, or power of the will, which is also but a power.

But in answer to this, I would say, That perhaps in strict and philosophic speech it may be better to say, The man, or the soul, is free; yet since this is the common language of men, and the usual way of speaking on this subject, and since this way of speaking, *viz.* ascribing liberty to the will, has no such tendency to lead one to mistaken ideas, if the nature of the soul be but a little explained, and the powers of it proved not to be two distinct beings or substances, I can see no necessity that a philosopher should change the common forms of speech: And notwithstanding all that Mr. Locke has said, I see no impropriety in asking, Whether the will be free or no, or in attributing liberty to the will, since it signifies no more than if we inquired, Whether the mind in its volitions is free to will or not? And to will this or that? Common forms of speech should not be renounced and abandoned without evident necessity, and Mr. Locke owns this is the meaning of the question in the latter end of Section 22.

There is another objection which Mr. Locke raises against the ascribing freedom to the will, *viz.* "That a man in respect of the act of volition, when any action in his power is once proposed to his thoughts, as a thing presently to be done, cannot be free;" for he must will to do it, or to neglect and omit it; and being under this necessity to exert some volition about it, the will is not free, *i. e.* the man is not free whether to will or not.

But I think this is a mere fallacy, for the question is not Whether the man can abstain from all volitions in general; but Whether the will can determine itself to choose or refuse this or that object, or act proposed? It is not Whether he can neither choose nor refuse; but Whether he can either choose or refuse? For it is this that shews the freedom of the will: And I would remark here, as I have found sometimes occasion to do, that it is possible for a vast and sagacious genius to be not always the fairest disputant; the raising a cloud of dust will sometimes evade the true question, and appear to gain the victory, when the disputant only hides himself.

The debates of Mr. Locke, relating to the principle or cause which determines the will to act, and other things relating to that important question, are set, I think, in so clear a light in a late *Essay of the Freedom of Will in God and Man*, that I choose to remit my reader to that little book.

SECTION VI.

OF COMPLEX IDEAS, AND MIXED MODES.

In the twelfth Chapter of the second Book of Mr. Locke's *Essay on the Understanding*, in the eighteenth, twenty-fourth, and several other parts of his work, this author speaks in such a manner as though all our complex ideas of substances and

mixed or complex modes, were formed by taking several simple ideas and joining them in one composition, to make a complex or compound idea; and though Mr. Locke might not actually advert to it in those paragraphs, yet he must certainly grant that we do as often obtain a clear knowledge of some compound or complex beings by receiving them at first into the mind in all their complex nature, and afterwards separating them one from another. Let me give an instance of both ways of acquiring complex ideas. If a child who is unacquainted with gold, see a guinea at some distance, he receives perhaps, only the idea of extension and yellowness; bring it nearer to the light, it appears round and shining; nearer yet, and he beholds the stamp of the coin; then touching it, he finds it is hard, and taking it in his hand, it is heavy; thus by degrees he joins the ideas of extended, yellow, round, shining, the figure of a head, and hardness altogether, and learns what a guinea is; this is the way of composition. But if a guinea be given at first into the hand of this child in a bright place, his ideas of extension, yellow, round, shining, hard, heavy, &c. are impressed all at once as one complex idea on the mind; and by separation of them, and considering them distinct, he may come to clearer notions of some of those single ideas; and by reason, observation, and comparison, he finds what gold is, and what is a guinea: This is the method of learning by division. The same thought may be applied to a city, a fleet, a swarm, a heap, a constellation, &c. supposing that the first idea the child has of a house, ship, ant, grain, star, be received in this complex manner by seeing many of them together. Thus composition of simple ideas, and division of complex ones, seem both to be used in the obtaining and increasing our knowledge of things, and enlarging our number of ideas.

And it must be acknowledged that Mr. Locke allows this way of coming by some of our complex ideas, *viz.* by sensation or observation of the several ideas at once in their complex state or union, when he says, Chap. XXII. Sect. 2, "Several of them might be taken from observation and the existence of several simple ideas so combined." And Sect. 9, "Thus by seeing two men wrestle or fence, we get the ideas of wrestling and fencing, which are very complex modes."

The author, in his eighteenth Chapter, Section 2, gives us several instances of our ideas of simple modes, such as sliding, creeping, running, dancing, &c. which perhaps may be as well called mixed modes, as some which he mentions in his twenty-second Chapter; for even there, at the end of the tenth Section, I think he makes running and speaking to be mixed modes; he calls them collections of simple ideas; and indeed it is sometimes very difficult to distinguish ideas simple from complex, whether they be ideas of substances or ideas of modes, partly because the acts of the mind perceiving several ideas, and uniting them in one complex one, are so swift and undistinguishable, that they seem to be one act, forming one simple idea; and partly because language hath appointed sometimes a single word to signify a very complex idea, and sometimes an idea much more simple needs many words to express it. Thus, through the mixture and confusion of ideas by words, it is hard to distinguish always which are the simple ones and which the complex, or which are the pure and which the mixed.

Here I might inquire, what difference doth Mr. Locke make between complex modes and mixed modes? Would it not be better to distinguish them thus: If we apply the term, simple mode, to the simple ideas of modes gotten by sensation only, as white, black, motion, figure, or to those gotten only by reflection, as a thought, a desire, &c. and if several simple ideas combined, whether sensible, or intellectual, or both, were

called in general complex modes; and the particular term, mixed mode, were confined only to those ideas which include both sensible and intellectual ideas, such as speech, conversation, witness, theft, &c. we might perhaps discourse more distinctly of these subjects: But, as this author himself says, in another place, "We ought to put things together as well as we can; but after all, some things will not be bundled up together under our terms and ways of speaking."

SECTION VII.

OF IDENTITY AND DIVERSITY.

The most familiar and common objects of knowledge are often found the most difficult to explain by principles of philosophy in clear and distinct ideas: Time, place, and motion, the fluidity and the hardness of bodies, the coherence of the parts of matter, and the principle of gravitation, are convincing instances hereof. The doctrine of identity and diversity is as hard to be explained; and while every child pretends to know what it is for one thing to be the same with itself and not another thing, philosophers are deeply entangled in the search thereof, and frequently confounded in their thoughts. This author, Mr. Locke, has given us, in his twenty-seventh chapter, an ingenious attempt to unfold the mystery of sameness, or wherein the *principium individuationis* consists: And he describes it, "existence itself which determines a being of any sort to a particular time and place incommunicable to two beings of the same kind." Which definition, though it is hard to understand in these words, yet he makes much clearer by large instances in the following sections. His meaning is, that identy may have various ideas according as it is applied to various sorts of beings; so the sameness of an atom is distinct from the sameness of a mass of atoms; and that is different from the sameness of vegetables, of animals, of spirits, of men. The identity of modes, actions, and relations, and those things whose existence consists in succession, is pretty clearly determined in his second Section, and the identity of complex beings in his twenty-eighth and twenty-ninth.

But this author having written more intelligibly on this subject than preceding philosophers, grows bold, and asserts, that the difficulty of this subject arises from names ill-used, rather than from any obscurity in the thing itself, and that it is want of care and attention that has clouded and confounded the thoughts of men. I take leave humbly to remark, that, though in his general scheme of identity and diversity, as well as in his particular application hereof to body, mind, plant, animal, &c. he has performed with great ingenuity, yet there remain some difficulties which want farther care, attention, and assistance to remove.

First, In his second Section, he asserts, that there could be no distinction of substances, or any thing else, one from another, if we do not suppose minds as well as bodies to exclude any of the same kind out of the same place: Which is not only opposed by the vulgar philosophers, which suppose a thousand minds may be in the same *ubi*, but it is very disagreeable also with the juster notion of a mind, which being not extended and having no relation to place, can neither be said to admit or exclude fellow-minds from

the same place; but that every spirit is sufficiently distinguished from all others by its particular cogitations and consciousness.

And besides, if minds were extended, why may not two created minds be in the same place, and penetrate each other, as well as he supposes God, the infinite mind, to penetrate all minds and all bodies whatsoever? Must God be the same with all minds, because he penetrates all minds? If a spirit be never so little denser than space, it is matter; and if spirits be no denser than spaces, why may they not penetrate each other, as well as both space and spirit are supposed to penetrate matter? I thought it had been a peculiar property of matter to be impenetrable by a being of its own kind. What! is spirit impenetrable by spirit too? Can a spirit penetrate the grossest matter, and yet not penetrate that thin extension of a fellow-spirit, which is finer than the most refined matter, and as tenuious and unsolid as space itself, as mere emptiness?

Secondly, In the fourth, fifth, and sixth articles, he makes the identity of vegetable and animal beings to consist in a participation of the same continued life, by constantly fleeting particles of matter in succession vitally united to the same organized body. Here I ask leave to remark,

1. Perhaps it would be too hard to ask this author* to explain with great exactness what he means here by life and vitality; the same life in a plant cannot signify the same juice or nutritive particles; for it may be transplanted from clay to chalk, or from a bed of earth to a bottle of water, and still it is the same plant. Nor can life mean the same tubes or the same channels between the fibres, for they may by degrees be obstructed, and new ones found or formed till the old are narrowed, withered, and grown impervious to the juice. Nor can life mean the same method of motion of that juice through the plant; for if you bend the head of a plant down to the earth, and let its top take root, as may be done to vines or brambles, then cut off the old stalk near its first root, and the passage of the nourishing juice will be just contrary, and yet perhaps it is the same plant still. I would ask further, when the graft of a pearmain has grown three months, or seven years, upon the stock of a crab, is it the same tree? Has it the same life, or has it not? Or when did it change?

I might say the like concerning the life of animals. It cannot be the same blood that is the same life; for in a few months perhaps we have few of the same particles of blood as before; however, by Dr. Lower's experiment of transfusion, it may be all changed in an hour. Nor can the same veins, or vessels, make the same life, for they are the same when the animal is dead, or they may be changed in life-time. Nor is it the same motion of the blood and juices, that makes the same life; for individual motion cannot be communicated to successive parts of matter, since it is perishing every moment, as his second Section assures us. Besides,

2. If a tree, or animal, be dead for some time, and, by almighty power, new life and vital motion be given to the same matter, it is a different life according to this author; for it is not the same continued life, yet it seems to be the same plant and the same animal.

3. In the end of his eighth Section, the author asserts, that the same successive body not shifted all at once, and the same immaterial spirit united to it, goes to make the same man. Here I would ask, Whether it would be the same man, if it were shifted all at

* The author was living when this was written.

once? If Goliath at a month old should have all at once received that vast addition to his bulk which increased by degrees in forty or fifty years, it is a doubt whether he would have been the same man or no: And yet why should the whole change in one moment hinder that to be the same thing which the distance of forty years would necessarily make the same? And generally nearness to the same time and place makes more toward the sameness of a thing than distance of place and time. Yet upon the whole, I think Mr. Locke is in the right, though the point has difficulties.

And perhaps this is the true notion of the sameness of man as relating to this world only, *viz.* That the same successive body, changing itself by degrees, according to the laws of animal life, and united to the same conscious mind, must make the same man. How far the doctrine of the resurrection requires the same body, see Essay VIII. foregoing.

Thirdly, He comes to inquire, in his ninth Section, wherein the sameness of a person consists, or personal identity? Here he first informs us, that he supposes, "A person is a thinking intelligent being, which has reason and reflection, and can consider itself as itself; *i. e.* as the same thinking thing in different times and places, which it does only by that consciousness, which is inseparable from thinking." Now, I question whether we may so easily agree with him in this, as a sufficient account of what a person is.

Let us consider a little. The words *self*, and *consciousness of self*, refer only to the pronoun *I;* but are not the pronouns *thou* and *he*, personal pronouns as well as *I?* Suppose *Armando* has slain his neighbour in the sight of *Martys* and *Criton*, and should be seized with such loss of memory afterward, or such distraction, as to blot out the consciousness of this action from the mind. *Armando* then would say, It was not I: But may not *Martys* and *Criton* still charge him, Thou art the murderer? May they not justly say of him, That he is guilty, and he should be put to death? Are they not as good judges of the same person as *Armando* is himself? What if *Armando* should deny the fact, as having really lost all consciousness of it? Is he not still the same person that slew his neighbour? Does not the witness of *Martys* and *Criton* declare him to be the same person? They know his body to be the same; and according to the laws of nature, they justly infer his soul must be the same also, whatsoever *Armando*'s distraction might dictate concerning himself: I think therefore that the word *person* implies one thinking being, one intelligent substance, which is always the same, whether it be or be not conscious and mindful of its own actions in different times and places.*

But Mr. Locke seems to be of another mind; for he adds "By this consciousness every one is to himself that which he calls *self*, it not being considered in this case, whether the same self be continued in the same or divers substances. In this alone consists personal identity, that is, the sameness of a rational being." And in Section 10, the question is, "What makes the same person, and not whether it be the same identical substance which always thinks in the same person, which in this case matters not at all. Different substances by the same consciousness, where they do partake in it, being united into one person, as well as different bodies by the same life are united into one animal, whose identity is preserved in the change of substances by the unity of one continued life; for it being the same consciousness that makes a man be himself to

* This discourse is entirely confined to personality among creatures, and has no reference to divine personality here.

himself, personal identity depends on that only, whether it be annexed only to one individual substance, or can be continued in a succession of several substances.—The same consciousness uniting those different actions into the same person, whatever substances contributed to their production."

Any man that reads this, and knows that the author is in doubt whether matter may not think, would be ready to suspect that he is so very solicitous to make the same substance unnecessary to personal identity, that so he may maintain his supposed possibility of matter being made capable of thinking; and that it may be possible that thinking may inhere in animal nature, whose constituent particles of flesh and blood may be perpetually changed, and yet the animal remain the same, and be the same person too.

But, to indulge no further suspicions, let us consider what he affirms plainly, *viz.* that personal identity consists only in consciousness; for, says he, Section 10, "As far as any intelligent being can repeat the idea of any past action, with the same consciousness it had of it at first, or that it has of any present action, so far it is the same personal self; for it is by the consciousness it has of its present thoughts and actions that it is self to itself now; and so it will be the same self as far as the same consciousness can extend to actions past or to come:" And he puts these questions, Section 12, "Whether, if the same substance which thinks be changed, it can be the same person? or Whether, if it remain the same, it can be different persons?"

To this he answers, This must be allowed to those who place thought in a purely material animal constitution, void of any immaterial substance, because the substances are perpetually changing in animal nature: But supposing immaterial substances only to think, yet he seems to think it hard to shew why personal identity cannot be preserved in the change or variety of immaterial substances, as well as animal identity is preserved in the change of material substances. Thus it is evident, that, by his reasonings, he makes the sameness of a person to consist entirely, and only, in consciousness, which he had before plainly and strongly asserted.

I acknowledge, he has offered some plausible arguments for it, and he has also mentioned some formidable objections against his own opinion; but I question whether he has so well refuted those objections, as to render that opinion of his certain and evident, *viz.* that the sameness of persons consists not in the sameness of substances, either material or thinking, *i. e.* either body or mind, but merely in a consciousness of the same thoughts or actions.

There is no need of debating the point about a man's being the same person with himself at the present time, because a man's own present consciousness will secure to him his own personal identity, though perhaps it will not confine it to himself alone. But the chief difficulty relates to his being the same with himself at distant times. And here let us consider some of the difficulties he proposes against his own sentiments:

1. He seems to allow, that according to his description of personal identity, two different men may be one and the same person; for in his thirteenth and fourteenth Sections, as well as in other parts of this Chapter, he grants that a different spirit, created long after, may possibly have the consciousness of actions done by a spirit existent many ages before, impressed upon it; by this means the Mayor of Queenborough might suppose his soul had been the soul of Socrates, as Section 19, and then this latter soul

or spirit, or this man, becomes the same person with the former, and thus Socrates and the Mayor of Queenborough become one person.

But I deny this to be proper conscious remembrance: It is only a delusive impression on the mind or fancy imitating the act of memory; it is a strong belief of what is false. And can such a frenzy be sufficient to turn two men into one person? Must Domitian be really the same person with Romulus, if his pride could so far impress his imagination, and impose upon his memory, as to persuade him that he built Rome? Is not this contrary to all the sense and reason, as well as the language of mankind? And might not Domitian, by the same madness, become Ninus, and Darius, and Plato, and twenty persons as well as two?

2. He seems to suppose, that real forgetfulness may make a distinct person as well as fancied memory may make the same; and thus Domitian was not the same person that killed fleas, if, standing at the head of his army, his pride should so far overpower his memory, as to blot out all the traces of that contemptible employment of his former hours.

And suppose that one of his soldiers should by a disorder of his brain imagine, that he was conscious that he himself had thus been employed in the palace of Domitian, and that he was then the emperor; would this forgetfulness of the one, and the frenzy of the other, make two Domitians upon the spot, or two persons of Domitian?

Doth not this author allow, in Section 19, that if Socrates asleep puts forth any actions, and is not conscious of it when he awakes, sleeping and waking Socrates is not the same person? And are they not two persons according to his notion? His twentieth and twenty-first Sections seem to speak the same thing.

The chief answer that he gives hereto is his distinction between *man* and *person*, he may allow that Socrates is the same man still, *i. e.* the same spirit united to the same animal body; but he doth not allow him to be the same person, because not conscious by remembrance of his own past thoughts or actions. And so I may be the same man that performed a hundred former actions of life, though I have entirely forgot them all; but I am not the same person that performed millions of those actions, since I have entirely forgotten a far larger number of my thoughts than I can recollect. Now, I would only inquire whether such a distinction between man and person is either correspondent with the nature and reason of things, or with the common language of all men, or the accurate expressions of true philosophy?

In short, according to this doctrine of personal identity, many men may successively or simultaneously be one person; and thus every private soldier in the army of Louis XIV. may become the same person as Alexander the Great, if a general frenzy should seize them, and make a strong impression upon their minds, that they fought the battle at Issus, and beat Darius there. And so any one man may become many persons: For if Mr. N. Lee, the tragedian in Bedlam, hath a strong impression on his fancy, that he taught Plato philosophy, then he is the same person with Socrates; or that he pleaded in the Roman senate against Mark Antony, then he is Cicero; or that he subdued Gaul, and made himself master of Rome, then he is Julius Cæsar; that he wrote the *Æneids*, then he is Virgil; that he began the reformation from popery, then he is Martin Luther; and that he reigned in England at the latter end of the sixteenth century, and then he is the same person with Queen Elizabeth.

On the other hand, this doctrine seems to allow us to believe, that if St. Paul should irretrievably forget all the labours and sufferings that he underwent for the sake of the gospel, he would not be the same person that fulfilled his apostleship so gloriously: And if Judas should never think again, through all his future existence, that he betrayed the Saviour of the world, he would not be the same person that committed that heinous wickedness.

The way Mr. Locke comes off from any terrible consequences of these possibilities, in his twenty-sixth Section, is by applying the word person to man only in a forensic sense, as he is the subject of happiness or misery, and is an object of rewards or punishments: And in Section 13, he supposes the goodness and justice of God will not suffer such extravagant possibilities to come to pass, which may affect the rewards or punishments of men: But his equity and truth will discover themselves in attributing proper recompences to men or spirits, considered only as persons, or in their personal identity, *i. e.* as conscious of their own former actions of vice or virtue.

But, without running to a forensic sense, there are so many inconveniences that may arise from such a notion of personal sameness, even in the common affairs of human life, as well as in philosophical science, as may utterly discourage our assent to this notion.

The word person is often used, if not most frequently, without any forensic sense: We say, "There were five persons present in the room at such a time," or "I had but one person with me," &c. And how can we tell how many persons were, or were not present, if the supposed consciousness of five other persons should place them there at that time, and render them the same persons? Or if the supposed forgetfulness of the persons really present should take away their personal identity? I fear this opinion, if universally received, would bring in endless confusions, wheresoever the word person was introduced.

Well, if Mr. Locke's opinion will not stand, the remaining question will be then, What is personal identity, or wherein does it really consist?

First, I would here observe, and allow, that we are now considering the word person rather in a philosophical than a mere vulgar sense: For I grant there are some modes of vulgar expression, wherein the idea of personality seems confined to the body of man: And thus we say, A very tall person, or a very comely person: Or when a consumption has made a man lean and pale, or the small-pox has altered the countenance, we are ready to say, that our friend is not the same person that he was before. It is plain that these phrases relate purely to the qualities of the body. And sometimes the same mode of speaking is used with regard merely to the qualities of the mind in union with the body; as when by long sickness or old age the memory or reasoning powers are impaired, we say of our neighbour, He is quite another person than once he was. But our business here is to consider personality rather in its philosophical signification, which yet is by no means so very different from the more usual meaning of it in common life, as Mr. Locke's account of it is.

I answer, therefore, *Secondly*, that with regard to mankind, which is the only thing we are now concerned about, the same person, in an incomplete sense, is the same intelligent substance, or the same conscious mind or spirit; but in a complete sense, it is the same spirit united to the same body, that is, in short, the same man; person and

man are here the same. Nor is this personal sameness altered or abolished, though the man should sometimes be so imposed upon by frenzy, as to suppose himself to have a conscious memory of actions which were not his own; or though he should be utterly forgetful of his own proper actions. Here are four questions then arising.

First Question. How can the same body be secured to make a part of this same person, since the parts of an animal are in continual flux and change? I answer, It is most highly probable, that there are some original particles of an animal body, which continue from its birth to its death, through all the gradual and successive changes of other particles, which may be sufficient to pronounce it the same body; and these may probably continue the same, even till the great resurrection. See Essay VIII. on that subject. An universal change of all the particles of the body at once, will hardly allow us to call it the same body.

But if there should be no such unchanging particles in the body of man, yet in the same current course of animal life the body may be called the same, according to the common laws of nature, continuing the same animal life under slow and successive changes of the particles of matter, while man abides in this world: And whether any particle be the same or no in distant years, perhaps it is not of so much importance in any thing that relates to proper personality in this life, since these particles have nothing to do in thinking or consciousness.

Second Question. How is the sameness of the conscious mind, or spirit, secured to make the other and most considerable part of the same person? How can we be sure that it is the very same spirit or thinking substance? I answer, That supposing a mind, or spirit, or any conscious being to be entirely immaterial, and, as I think, inextended also, it is impossible that any part of the substance of it can be changed or diminished, without destroying the whole; because it is so uniform and simple a being, it is a conscious and active power subsisting by itself. It has no parts, and cannot but exist or cease to exist in the whole or at once. Any new substance therefore coming in the room of this makes it properly a different person, it is another self, another intelligent mind or conscious being: And, to do Mr. Locke justice, he acknowledges, in Section 25, that the more probable opinion is that this consciousness, in which he supposes personal identity to consist, is annexed to one individual immaterial substance.

Third Question. But supposing that frenzy should so far impose upon one man as to make him fancy himself conscious of the former actions of another man, or that forgetfulness should make him unconscious of his own past actions; how could he know and be assured that he was the same person who performed his own actions, or that he was not the same person who performed the actions of another? To this I answer, that for the common affairs of human life, God has in general ordained that persons should be sufficiently conscious of their own personality and sameness with themselves: Or if through any disorder of nature, a man should lose or change the true idea of himself and his own actions, or falsely ascribe the actions and personality of another man to himself, and should say, I did this, or I did not that, contrary to plain truth and fact, there are generally witnesses enough among his fellow-creatures, who are not thus disordered in their minds, to assure him, Thou didst not, or Thou didst, according to plain fact and the truth of things: And they are able to make effectual proof to him, if he be capable of receiving it, that he is the same person with his former self, and that he is not another person, or that he is the same man, and not another. By their senses they know his body

is the same; and they know that without a miracle his soul must be the same too, because it is contrary to the laws of nature for a new soul to be united to that body.

In matters of great or final importance, the equity and goodness of God will take care to prevent that one man shall not be rewarded for actions which he never did, and which he has no pretence to but by his own frenzy and disordered imagination: And also that one man shall not ordinarily suffer any punishment, without reducing to his mind a consciousness of those actions for which he is punished. God the judge of all will effectually secure this matter in all his final recompences of mankind. If it be lawful for Mr. Locke to have recourse to the equity and goodness of God to guard against any unhappy consequences which may attend his strange and novel opinion, it is as lawful for a meaner writer to have recourse to the same perfections of God to guard against any ill consequence that may attend an opinion which is so much plainer in itself, and so much more agreeable to the common sense of mankind.

Fourth Question. If you inquire further concerning the separate state of human souls, what makes the personal identity of a man there, it is sufficient to say, that it is the same individual spirit which was once united to a certain animal body, and performed good or evil actions therein, and which has now commenced its state of recompence separate from the body; and there is and will be a sufficient evidence of the sameness of personality for every separate soul during that time, in its real consciousness of its own former actions without forgetfulness or delusion, though its personality may not be counted so complete till the resurrection of the body and its reunion to it. Then shall the whole man receive recompences, according to his former behaviour in his complete person both soul and body. Personality and sameness of persons, either in this world or the other, must not stand upon such a shifting and changeable principle, as may allow either one man to be two persons, or two men to be one person, or any one man or person to become another, or to be really any thing but himself.

A

BRIEF SCHEME

OF

ONTOLOGY;

OR,

THE SCIENCE OF BEING IN GENERAL:

WHEREIN

ALL THE VARIOUS AFFECTIONS, OR PROPERTIES, ADJUNCTS AND RELATIONS OF IT, ARE CONTRACTED INTO A COMPREHENSIVE VIEW, AND RANGED IN A NATURAL AND EASY METHOD.

THE

PREFACE.

EVERY man who employs himself in thinking, endeavours to dispose his ideas in such an order as appears to him most comprehensive and perspicuous in itself, and most obvious to his own survey, as well as easiest for his recollection. If I could have met with any such short and plain scheme of Ontology as I wished, among the authors whence I learned that science, I had never taken pains to form this model, or draw the present sketch. I am not conscious that I have admitted into it any of those barren and perplexing subtleties which have over-run this branch of learning, as it has been cultivated in the schools under the title of *Metaphysics*.

In our days indeed, that name is dropped, and with much better reason it is termed *Ontology, or the Knowledge of Being in general*, with its various affections, *i. e.* the properties, adjuncts, and relations that belong to it. It is an useful science in itself, which teaches us to place every being and every thought and idea in its proper order in our minds, and gives us an extensive and regular survey of things; and I am sure it may be exhibited in such a manner as to secure it effectually from that just censure, and that forbidding character which the learned Professor De Vries gives to the metaphysics of the schools in former ages. His satire on it may be thus expressed in English: "This science," saith he, "was treated of by the sophisters in such a way, that one would swear they aimed at nothing else but to vex and torture the understanding with difficult trifles, and to infect all language with blundering nonsense, and with the grating horror of barbarous sounds which have no meaning. These were men of empty and vain subtlety, who built up huge volumes of worthless words and disputes about nothing; whose leaves, if they were not divided by the grocer to wrap up spice and sugar, would now lie for ever in heaps to feed moths and bookworms. This is so far from deserving the title of wisdom or prime philosophy, that it is rather the extreme folly of monkish dreams and dotages."

Such just and severe satire as this being spread abroad in some modern schools, and in the polite world, hath tempted our youth to run to another extreme; many of them will sneer at the name of metaphysics, and pass a scornful censure on all the science of ontology at once; they are ashamed of knowing it, and therefore renounce all pretence to it with pride and pleasure. The endless multitudes of senseless and empty distinctions of the ancients, their useless and thorny questions and disputes introduced into this science, and the many old and absurd canons and axioms which they were wont to place among those principles, which they called the prime foundations of all learning, have appeared to our age in so ridiculous a light, that we have been too ready to throw away this useful part of philosophy, because of the follies which have been

blended with it. But it becomes a philosopher to distinguish between the gold and the dross, and not to renounce and abandon a rich mine because the ore is not refined, or perhaps has been debased with vile mixtures by some foolish labourers and melters.

If we would not suffer ourselves to be imposed upon by a little empty raillery, but take a just view of things in order to pass a right judgment, we should find this part of philosophy is very necessary and of admirable use to all men of science, and that in every branch of the learned professions: To have all the vast multitude of themes and ideas about which we have occasion to think, speak, or write, ranged in a set of regular classes, so that we know where to find and place them all, is of unspeakable advantage in explaining, defining, dividing, distinguishing, illustrating, and arguing upon every subject we take in hand. Nor does this serve only the purposes of the college, and direct, assist, and facilitate the labours of students and the learned world, but gentlemen and persons in every degree of common life might be taught to enlarge the number of their ideas, to extend their reasonings far wider, and dispose their thoughts in more useful order, by the assistance of this part of knowledge, if it were displayed in a happy and perspicuous manner, with the exclusion of thorns and straws, and all the perplexing trifles that had over-run the academies of former ages.

I wish some skilful hand would undertake this work: If I was ever able to perform it, according to my own idea, yet it is too late in life for me now to return to these studies. What I have here written has in part laid long by me: It pretends to nothing more than a brief and compendious sketch of notions that relate to this science, and a mere arrangement of the most useful themes, which should here be treated of in a contracted view; and though it may be of chief advantage for the recollection of those who have been acquainted with the matters, yet I hope it will not be unserviceable for the instruction of such as have known nothing of them, if they will read with attention and care. In some places I define not only the general theme, but the particular kinds of it also; in a few others I only just mention the terms of the particular distinctions, and neither add any definitions or examples to them, where the very terms are so plain that a common reader may know the meaning of them without explication; but in most places I give such examples, as may sufficiently explain and illustrate the subject and the several divisions and branches of it, without laborious and disputable definitions.

What the metaphysical writers have called axioms or canons, are very numerous almost under every head or theme of discourse; but many of them are so false in the most obvious sense of them, and want such a number of limitations and learned distinctions to reduce them to truth, that I thought it needless to stuff this epitome with them. Many others are so useless to any valuable purposes, that they deserve no room in the mind or memory. Those few which are useful I have placed in their proper chapters as notes, and several others I have added which seemed to me not unprofitable.

It is not often that I divert out of my way to tell the world particularly what the moderns or the ancients have said on these subjects, nor how far I agree with them or differ from them; but in the main I directly pursue my own track of thoughts, and range this infinite variety of ideas, collected from the universe of beings, in such a method as appears to me the most comprehensive and natural, plain and easy.

A BRIEF SCHEME OF ONTOLOGY.

CHAPTER I.

OF BEING AND NOT-BEING, WITH A GENERAL SCHEME OF THE AFFECTIONS OF BEING.

ONTOLOGY is a discourse of being in general, and the various and most universal modes or affections, as well as the several kinds or divisions of it.

The word *being* here includes not only whatsoever actually is, but whatsoever can be.

Being is the first and most obvious, the most simple and natural conception that we can frame of any thing which we see, hear, feel, or know. It is in some sense included in all our other conceptions of things, and is therefore the most general or universal of all our ideas.

By the *affections of being* are meant all powers, properties, accidents, relations, actions, passions, dispositions, internal qualities, external adjuncts, considerations, conditions, or circumstances whatsoever; in a word, all those modes which belong to things, either as they are in themselves, or as they stand in relation to other things, or as they are represented or modified by our ideas and conceptions.

Since every thing may be greatly distinguished and illustrated by its opposites, before we begin to treat of the affections of being in general, we may consider very briefly what sort of notions we may frame of not-being, or nothing.

Not-being, as it excludes all substances and modes whatsoever, is nihility or mere nothing.

Not-being, as it excludes particular modes or manners of being out of any substance, may be considered, either as a mere negation, such is blindness or want of sight in a stone; or as a privation, such is blindness or want of sight in a man; of which see Logick, Part I. Chap. II. Sect. 6.

Note 1. Pure nothing, considered merely in itself, has no proper affections belonging to it; though our imagination sometimes may so far abuse us as to mistake nothing for something, as in the case of shadows; and at other times we mistake something for nothing, and suppose a room full of light and air to have nothing in it. So weak and imperfect is our present state of knowledge.

Note 2. Though a nonentity or not-being is really nothing in itself, yet as it is introduced by some relation to being, it may afford foundation for some sort of thoughts or conceptions, or some relative affections, which hereafter will be described. On this account nonentity has been usually distinguished from mere nihility or pure nothing.

Note 3. Hence it follows that that old axiom of the schools *Non-entis nulla est scientia*, or "What has no being cannot be known," must be understood with some limitation: For, 1. We may know things possible though they have no actual being: 2. We may know things past and future which have no present being: 3. We may also form a sort of idea of nonentities, or not-beings, from their relation to beings; we can see a shadow, and talk of silence: And even when we speak of pure nihility, or nothing, we are ready to frame some sort of notion or idea of it, since we reason and discourse about it: Perhaps this may arise from the imperfection of our present state.

Note 4. Though pure nothing is that which in truth neither has a being nor affections, nor can be properly made the measure of any being, yet negative quantities, which, as mathematicians generally say, are marks and measures of what is less than nothing, are of great use and necessity in algebra; because this science teaches us to form our ideas of all real and positive quantities as so much more than nothing.

Having distinguished being from its opposites, let us proceed now to lay down a general scheme of the affections of being.

The most general and extensive distribution of the affections of being is into absolute and relative.

Absolute affections belong to each being considered in itself, and these are nature or essence and existence, duration and unity, power and act.

Relative affections or relations arise from some respect which distinct beings bear to one another, or, at least, to some part or property of themselves: Now these are real or mental.

Real relations are those which arise from the constitution of any being among others in the universe, to which it has a real reference, whether we think of it or no. Such are, whole and part, cause and effect, subject and adjunct, time and place, agreement and difference, number and order; to which may be added truth and goodness, lest the metaphysicians should complain of this omission.

Mental relations are such as arise not from things themselves, but only from our manner of conceiving them and referring one thing to another: Such are abstracted or second notions, signs, language, and particularly all extrinsic denominations and terms of art.

Note, All affections of being are not positive, but they may be sometimes negative. Some men are knowing, some are ignorant or without knowledge.

CHAPTER II.

OF ESSENCE OR NATURE, MATTER AND FORM.*

AMONG the absolute affections of being the first that offers itself is essence or nature; and it consists in an union of all those things, whether substances or modes, which are necessary to make that thing be what it is; solid extension is the essence of matter; an animal body and soul united are the essence of a man; and many flowers bound together are the essence of a nosegay.

* See this chapter explained more at large in the eleventh Essay foregoing, which was written when I designed to have drawn out this ontology into a more complete form.

Note 1. Whatsoever is clearly contained in the nature or essence of a thing, may be affirmed of that thing: Contingence is contained in the nature of a creature, and we may say of every creature, it is contingent, or may not be. Existence is contained in the nature or essence of God, and we may therefore affirm that God has existence, or God exists.

Note 2. The essences of mathematical beings are immutable; never so little an alteration destroys the essence of a circle or a square: But the essences of natural beings are not so, nor do they consist in an indivisible point, but admit of degrees. A rose with more or fewer leaves may be a rose still. Marble is still marble whether it be tinged yellow or grey, or made a little harder or a little softer. But when the alteration or difference is very great, it is sometimes hard to say whether it retain the same essence so as to deserve the same name: Is a bat a bird or a beast? Is every monster to be called man which is born of a woman?

Query, When Mr. Locke infers from hence that the essences of natural beings are but mere nominal essences, does he carry this matter too far, or not?

Though we do not so well know the distinct essences and natures of particular kinds of spirits, as to say certainly what they consist in, yet the essence of every particular kind of body certainly consists of matter and form.

Matter is the solid extended substance which is common to all bodies: The form includes and implies those peculiar qualities, both real and sensible, which make any particular body be what it is, and distinguish it from all other bodies.

Note, Shape or figure, size or quantity, situation or place, together with motion and rest, are called the real or primary qualities of matter, because they do and would belong to bodies, whether there were any sensible being to take notice of them or no. But colour, sound, taste, heat, cold, &c. are called sensible qualities, because they are ideas, or modes which we attribute to things merely as they affect ourselves, or any sensitive beings. They are called, also, secondary qualities, because they arise from the different combinations and dispositions of those real and primary qualities before named, and their power to impress our senses in different manners.

The matter of a body is either proxime or remote; the proxime matter of a ship is timber, the remote is trees.

Note 1. Matter and form have been improperly ranked among the causes, yet they may be called constituent principles of things.

Note 2. Matter and form have been transferred from things corporeal to intellectual: So we speak of the matter of a sermon or treatise, which is the theme of discourse; and the form of it, which is the manner in which the speaker or writer treats of it.

Hence arises the famous distinction of material and formal, usually and pertinently applied to subjects of various kinds, whether intellectual or corporeal. Wheat is bread materially, and ideas or terms are materially a proposition; but neither one nor the other are formally so.

Having spoken of the nature of things in this chapter, it may not be amiss to take notice of a few distinctions relating to it.

The term nature is sometimes taken for the eternal and unchangeable reason of things; so it is necessary, in the nature of things, that three and four should make seven; and that the three angles of a triangle should be equal to two right angles.

Sometimes it signifies the course and order of second causes, whether minds or

bodies, together with the laws of matter and motion, which God the first cause has ordained in this world; in this sense it is natural for the limbs to move when the soul wills, and the four seasons of the year should succeed each other in Europe.

In this latter signification of the word, some things are said to be according to nature, as when an oak brings forth acorns. Some are beside nature, as when an animal brings forth a monster. Some may be called contrary to nature, as when the stock of an apple-tree brings forth pears by virtue of the twig of a pear-tree grafted into it: *Rom.* xi. 24. Other things are above nature, as are all the instances of divine and miraculous operation: Though these are sometimes called contrary to nature too, as when the streams of Jordan ran backward, or the sun stood still.

CHAPTER III.

OF EXISTENCE, WHETHER ACTUAL, POSSIBLE, OR IMPOSSIBLE, NECESSARY OR CONTINGENT, DEPENDENT OR INDEPENDENT.

EXISTENCE is distinguished from essence, as the actual being of a thing is distinguished from its mere nature considered as possible.

A being is possible when the ideas, which are supposed to make up its nature, may be actually united and have no inconsistency, as a golden mountain, or a river of wine: But where the ideas are inconsistent, it is called an impossible, as an iron animal, or silent thunder. This has neither essence nor existence.

Impossibles may be distinguished into four sorts; some things are metaphysically or absolutely impossible in the abstracted reason and nature of things, as a cubical circle, a thinking statue, a purple smell, or a bushel of souls. Others may be called physically or naturally impossible, *i. e.* according to the present laws of nature, such are three eclipses of the sun in a month, or that a full moon should always last. Others are morally impossible, that is improbable in the highest degree; so we may venture to say that it is impossible for an atheist to be strictly virtuous, or for a Hottentot to form a system of religion or mathematics; And such are many of the legends of the popish saints. Other things are said to be conditionally impossible, *i. e.* when such a condition is put as makes that thing impossible, which otherwise would not be so, as a tree bearing fruit on supposition it has no bloom.

Note 1. It is absolutely impossible that the same thing should both be and not be in the same sense, and at the same time, and in the same respect.

Note 2. When we pronounce any thing absolutely or naturally possible or impossible, we should do it with great caution, since we know so little what ideas are or are not mutually consistent, either in abstracted reason, or according to the present laws of nature.

Note 3. God is the only being that carries actual existence in his very nature and essence, and therefore we may say with assurance, God exists.

Note 4. Proper existence belongs only to individuals, for all general natures, *i. e.* genus, species, &c. are but abstracted ideas of the mind, and never exist alone, but only in individual beings.

But let us proceed to the ideas of necessity and contingency, which in this chapter relate to the existence of things, in the sixth chapter to actions.

All things which exist have either a necessary existence, *i. e.* they are because they must be; or they have a contingent existence, *i. e.* they are, though they might not have been, and may cease to be.

A necessary being wants no cause, and is independent: But a contingent being is dependent, because it wants a cause to make it exist.

This dependence is either total or partial; constant or occasional; for existence, or for duration, or for operation, &c. see more in Chap. IV. and in Chap. X.

Note, Independence in the highest sense belongs only to God, and is the same with self-existence, and near akin to the idea of necessary existence.

Necessity of existence may be distinguished into absolute or conditional: God alone is absolutely necessary, for he must exist whether any other thing be or be not: But as for creatures, though they are properly contingent beings, yet a conditional necessity may belong to them, *i. e.* such a creature or such an event must exist if the causes are put, which will certainly and necessarily produce it: If a hen's egg be hatched it will produce a chicken: If the sun rise there will be daylight: If a man will leap down a vast precipice, he must be destroyed.

It is called also sometimes a conditional necessity, when such premises or conditions are put from whence an event may be certainly inferred, though they have no manner of causal influence on this event: So we may say, that it was necessary antichrist should arise, because the God of truth had foretold it.

Necessity may be divided into natural, logical, and moral: By natural necessity fire burns, and snow melts in the sun-beams. By logical necessity the conclusion of a syllogism follows from the premises. By moral necessity intelligent creatures are obliged to worship God, and virtue will be finally rewarded: Though I know some writers take the term moral necessity in another sense.

Both necessity and contingence are ideas frequently applied to the events which arise in the natural world, *i. e.* the world of bodies, whether animate or inanimate: But the events in the moral world are more usually called contingent, *i. e.* the voluntary actions of intelligent creatures; though necessity may in some cases be ascribed to them too, as, The blessed God necessarily acts agreeably to his own perfections: A rational and sensible being necessarily hates pain and misery.

Events in the natural world are said to be necessary, or to arise from natural necessity, when they are derived from the connection of second causes, and those laws of motion which God established in the world at the creation, and which he continues by his providence. This is the chief and most usual meaning of the word nature: And indeed fate, in its derivation and original sense, signifies but the dictate or decree of God. But if the appointment of God be left quite out of our thoughts, then fate is a heathenish term, to denote a sort of eternal necessary connection of causes, without regard to the first cause; and some of the heathens have exalted this fate above the gods themselves.

Events in the natural world are said to be contingent, or to arise from chance when they are different from what is usual in the course of nature, and utterly unexpected, though indeed the course of nature really produces them by the interposition of some causes imperceptible to us. Yet the heathens have made this chance and fortune a sort of deities too, for want of their knowledge of the train of second causes, and a due regard to the first cause. Events in the moral world, which arise from the mere free

will and choice of intelligent beings, are called contingent, because they are not brought into existence in a necessary manner by any natural connection of causes: Yet they are never ascribed to chance, for chance stands as much in opposition to design and freedom, as it doth to fate and necessity.

We might here just take occasion to observe, that not only with regard to existence are beings said to be necessary or contingent, but with regard to the manner of their existence also. God is necessary in this respect as well as in the other, and therefore his being and his attributes are unchangeable, but creatures are changeable things, because their manner of existence is contingent, as well as their existence itself.

Note 1. All the future events which arise from natural and necessary causes will not only certainly but necessarily exist; and though we call many of them contingencies because they are uncertain to us, yet they are not so to God who knows all things. So we say, it may or may not rain to-morrow.

Note 2. All the future actions of free agents, and the events arising from thence, both which are properly contingent, may be certainly foreknown by God; and therefore we may say, they will certainly exist, though there be no such determination of them as to make them properly necessary; for the great and unsearchable God, who has foretold many free actions of men, may have ways of knowing things certainly which we cannot so much as guess at. It is too audacious for man to assert that God cannot know things, merely because we cannot find out a medium for his knowledge of them.

See some further considerations of necessity in Chap. VI. where we treat of freedom.

CHAPTER IV.

OF DURATION, CREATION, AND CONSERVATION.

DURATION is merely a continuance in being; and this has commonly been divided into permanent and successive.

Permanent duration belongs to God alone, and implies not only his continuance in existence, but an universal, simultaneous, and endless possession of all the same properties and powers without change.

Successive duration belongs to creatures, and implies the continuance of the same being with changeable and changing modes, powers, properties, and actions, one after another.

It is only successive duration which is most properly divided into past, present, and future. The present, taken in a strict sense, is only the moment that now exists, and divides the hours or ages past from those which are to come.

It is very hard for us to conceive of any duration without succession: But this permanent duration of God is his eternity, which carries some things in it above our present ideas. See more in the chapters of Time and Infinites.

As creation gives existence to all created substances, so conservation is said to give duration, *i. e.* continuance in existence to all creatures.

Though the most proper idea of creation is the causing a substance to exist which had no existence, yet the word is also used, in a less proper sense, when any particular bodies are formed out of such a mass of matter as seems utterly unfit for that end; when such

changes are made in any substance as are generally supposed to be above the power of creatures, and belong to God alone: So God created fish and fowls out of the water, and man and beasts out of the earth; though the creation of the substance of water or earth, or the matter out of which they were made, is the original sense of the word.

Conservation here refers to the same things which are the objects of creation, and on which God is supposed to exercise his almighty power.

Queries. Inquire then, how far do creation and conservation differ? Is conservation a continued creation? See Essay XI. Sect. *ult.* If a creature be once formed, would it not continue to exist without any divine conserving act? Is it possible the Creator should exist without willing or nilling the continued existence of his creatures?

Note, Substances being once made, a creature cannot of himself destroy them, or make their duration to cease, any more than he could of himself create them: But multitudes of modes are made and destroyed perpetually at the will of creatures, and are placed within their power.

Note, Though time, place, ubiety, might be introduced here and connected with duration, yet they are all plainly relative affections, and therefore I refer them to their more proper place.

CHAPTER V.

OF UNITY AND UNION.

THE next absolute affection to be considered is unity, which perhaps had never had the honour to make a chapter in metaphysics, if it had not been coupled with verity and bonity; which three properties being ascribed by Plato to God the great and eternal being, Aristotle, his scholar, ascribes them all to the idea of being in general, and thence came these ideas to make such a figure in ontology; though it must be confessed that several things have been said on these subjects which furnish the mind with useful distinctions.

Unity is that whereby a thing stands as it were divided in our conceptions from all other things: And this unity is either simple or compounded; we say one nosegay as well as one flower, and one family as well as one person, and one universe as well as one creature or one atom. See something further concerning unity, simplicity, and multiplicity in Chap. XIV. Of Number.

Here we take occasion to treat of the doctrine of union, though perhaps some may call it a relative idea. It is that whereby two or more things either really become one thing, or are considered as one: This distinguishes union into real and mental.

Real union is either natural and necessary, as between the root and the tree; or fortuitous and accidental, as between two apples making a twin; or designed and artificial, as between the graff and the stock, or drugs united to compound a medicine.

Again, real union is corporeal, spiritual, or human.

First, Consider corporeal union, or union of bodies, whether dry or liquid, which is made by blending, mixing, compounding, by contact, aggregation, colligation, &c. Under this head we may also treat of vital and of inanimate unions of corporeal beings. Some of these corporeal unions may communicate properties, as fire joined to wood, a graft joined to a stock, perfume to garments. Others do not, as a bundle of dry sticks, or a heap of stones.

Secondly, Consider spiritual union, or union of minds; which may be called either intellectual, by mutual consciousness of each other's thoughts, or by agreement in opinion; or it is moral, by friendship or mutual love; or supernatural, as it may relate to God and the sacred themes of revealed religion.

Query, How far an union of spirits may arise from a superior spirit assuming an inferior, to act by it in the manner of an instrument, or under-agent? In this there is no real communication of properties; yet the same actions may be ascribed to both or to either when united, and the same properties too by common figures of speech. But this I leave to theological debate.

In the last place consider human union; *i. e.* the union of an animal body with a spirit to make a man; and what are the effects of this union, *viz.* sensation, imagination, passion, &c. voluntary motions of the body, &c. And let it be noted, that though there be no real communication of properties here, yet there may be a nominal communication of them; as a wise headpiece, a meagre soul, a prudent body, a heavy genius.

Mental union is when several things really distinct and different are considered as one: There are no two beings, nor any multitude of things so different and distinct, but may by their likeness or agreement, situation or other circumstances, come to be considered as one thing, and come under one name. Air, water, earth, and all the infinite variety of creatures make one universe; all individuals are united in one species, and all species under one genus; all substances, whether minds or bodies, come under one general name of being; and all the ideas and collection of thoughts as well as words in this book, make one treatise of ontology. *Note*, In all these instances there is a real foundation for this mental union.

In many unions we have occasion to consider not only the terms which are the things united, but also the means or bond of union between these terms. In a nosegay the bond of union is a thread: In metals it is solder: In a heap of stones it is juxta-position and gravitation: Between friends the bond of union is love: Between kindred it is birth: Between master and servant it is contract, &c. But there are many things united where the bond of union is unknown, or must be resolved into the appointment of God. What is it unites the parts of matter in a hard body? What is it unites the flesh and spirit in man?

Union and composition may give occasion also to speak of abstraction, division, dissolution, separation, &c. which stand in opposition to union.

CHAPTER VI.

OF ACT AND POWER, ACTION AND PASSION, NECESSITY AND LIBERTY.

THE next absolute affections of being are act and power; though it may be a little doubtful whether there is not enough of relation between these two ideas to throw them into the rank of relative affections.

Each of these, *viz.* act and power, may be distinguished three ways:

1. As actual being or existence is distinguished from potential, or a power to be: So a book already written differs from a book which may be written, or that is merely possible.

2. As actual doing or action is distinguished from a power to do, so the actual putting bodies in motion differs from motivity or a power to move them: So the acts of thinking in spirits have some sort of difference from the thinking power.

3. As actual suffering or passion is distinguished from a power to suffer, so actual division in matter differs from mere divisibility; or the actual motion of a body is different from mobility or a power to be moved.

Here we treat of action, which is the exercise of a power to do, and passion, which is the exercise of a power to suffer. *Note*, Passion and suffering in this philosophical sense signifies only receiving the act of the agent or doer by the patient or sufferer. When hailstones smite upon a rock, the hailstones are the agents, the rock is the patient; it is no matter whether any impression be made or no: Or when a child honours his father, the father is the patient in a philosophical sense, and the child the agent.

Here it is proper to introduce all the needful distinctions of action. 1. It is immanent or transient. 2. It is natural, supernatural, voluntary, or accidental. 3. It is necessary or free.

1. Immanent action has no different patient, but continues in the agent: So a man forms ideas, or he loves himself. Transient action passes over to some other object as a patient: So a man draws a picture on canvass: So a father loves his son, and feeds or clothes him.

2. Natural action: So the fire hardens clay. Supernatural action: So Elisha made iron swim by casting a stick into the water. Voluntary action: So the potter moulds his clay into a vessel. Accidental action: So a servant heedlessly throws down a glass and breaks it.

3. Necessary action: So the sun warms the earth. Free action: So man chooses what food he likes, and eats it when he pleases.

Note, Necessary agents act always, and that to the utmost of their power, *i. e.* when things requisite to their agency are present: But free agents act what and when and as far as they will.

Perhaps the doctrine of liberty and necessity might be here properly inserted. We have already spoken of necessity of existence, as it is opposed to contingency: Here necessity of action stands rather distinguished from freedom or liberty, yet is not universally and utterly inconsistent with it, as will appear in what follows.

Necessity has been before distinguished into natural, moral, and logical. See Chap. III. Natural necessity is either internal or external. Internal necessity is that which arises from the very nature of the thing itself: So a sensible being seeks its own preservation, a fish avoids dry land, and a fox the water, and lead sinks in the sea. That necessity is external which arises from some outward force of restraint or constraint: So lead is upheld on the surface of the water; so a fox is driven into the sea, or a fish drawn in a net to land; and so a man is constrained to wound himself. This is sometimes called a forcible necessity.

Liberty is applied to the will, or to the inferior and executive powers. The will is always free in its choice of what it likes: The lower powers are not always free to act or do what the will chooses. A man close fettered cannot walk, nor can he fight when his hands are tied, though he may will or choose to do it. On this account freedom is better described by choosing than by acting.

Again, Liberty of the will is always a liberty of spontaneity or voluntariness, without considering whether it can do otherwise or not: So when an intelligent being wills and pursues its own supposed satisfaction or happiness, this being is called free herein, though this action be necessary, and it cannot do otherwise. The liberty of the will is sometimes a liberty of choice and indifference, a freedom or power to choose or not to choose among two or more things proposed: So a man chooses to speak or to be silent. This freedom is inconsistent with necessity; and this is called by many writers liberty in the most proper sense; and perhaps it had not been amiss if the term liberty had been always confined to this sense only, but mankind have not always done so.

There may be also an absolute or perfect freedom, as when a hungry man wills to go to dinner; or a comparative freedom, when a sick man wills or consents to take some nauseous physic rather than continue in pain.

Let this suffice for the distinction of free and necessary actions. See something more relating to this subject in the chapter of Cause and Effect.

Some philosophers suppose nothing worthy of the name of agent or action but the will and its exercises; and they call all other beings and their powers and operations merely passive; but this perhaps is too great a violence offered to the common sense of words, though there may be some appearance of reason for it in the nature of things.

Having spoken particularly of act and action, let us now say something more of power.

We may distinguish several powers, with the degrees and kinds of them. First, disposition, which is an imperfect power of performing any thing, and but the lowest degree: Next to this is mere ability to perform, *i. e.* with difficulty and care: And then a strong habit, *i. e.* to perform with ease and certainty.

Among powers, some are merely corporeal and inanimate, as the power of the sun to melt snow, and to draw up vapour: Some are vegetative, as nourishment, growth: Some are animal powers, as eating, swallowing, digesting, moving, waking, sleeping, &c. Some are spiritual, as meditating, reasoning, reflecting, choosing, refusing, &c. Some are human, arising from the union of mind and body, as sensation, imagination, language. Of the passions of man, and what sort of powers they are, see *The Doctrine of the Passions explained and improved*, second edition, 1732.

Again, Of powers, some are natural, as a man's power to form a voice: Some acquired, as music, ploughing, language learned by degrees; and some are infused, as the power of the apostles to speak many languages.

Powers acquired by exercise, are most properly called habits. All powers of natural action in animals, or artificial in men, are called faculties, as a power of walking, dancing, singing: In inanimate beings they are principles. Powers of moral action are called also principles or habits, as temperance, justice.

Note 1. Though we can draw no inferences from the power to the act, or that any thing is because it can be; yet inferences may be justly drawn from the act to the power, or that such a thing can be because it is.

Note 2. Whatsoever power the agent has to act, yet the action can be received by the patient no farther than the power of the patient reaches. This is expressed in scholastic language, *quicquid recipitur, recipitur ad modum recipientis.* A gallon may pour out its liquor into a pint bottle, but the bottle can receive but a pint: And if the neck be narrow, it can receive liquor but slowly, how fast soever the larger vessel may pour

it. A tutor may teach a child all the rules of reading in a day, but a child cannot learn them in a month.

Note 3. Neither the power of creatures, nor of God himself, extends to things which are inconsistent in nature and self-contradictory: What his infinite wisdom cannot join, his power cannot produce. Nor does this impossibility in things argue any impotence in the blessed God. Yet let it be observed, that it is a much more modest way of speaking generally, to say such things cannot be done, than that God cannot do them.

CHAPTER VII.

OF RELATIVE AFFECTIONS OR RELATIONS.

A RELATIVE affection is the same with a relation: This arises from the respect that one thing bears to some other thing or things in the universe, or to some part or parts, property or properties of itself. The same relation is not confined to two things, but it may belong to many. Paternity and sonship, greatness and smallness, are relative ideas; and so are a part and a whole; a king and his subjects; beginning, middle, and end.

In relations we consider, first, the subject of them, that is, the thing of which we are speaking; this is called the relate; and then the term to which this thing is related, which is called the correlate. So if we speak of a father, that is the subject of the relation; and the term or correlate is the son: But if we are first speaking of the son, then the son is the relate or subject of the relation, and the father is the term or correlate.

Some relations arise from the mere existence of the two beings, so the likeness of two eggs. Others require a foundation of the relation, distinct from the mere existence of the relate and correlate; as in master and scholar, instruction is the foundation; in buyer and seller, the foundation is compact.

Relations are of several kinds.

1. They are natural or moral, accidental or voluntary. Natural relations are between root and branches, father and children, kindred by birth, &c. Moral, are those relations which the actions of men bear to a law, and thus they are good or evil, rewardable or punishable: This law is either human or divine, &c. Accidental relations are between several persons happening to become neighbours, or between a company of soldiers drawn out by lot, or between flowers springing up from the same bed of earth. Relations are instituted and voluntary, *i. e.* freely chosen, as between husband and wife, or two or three friends, &c. Sometimes they are chosen or voluntary only on one side, as a carter chooses what horses shall make up his team, or a man what house he will inhabit.

2. Relations may be termed reciprocal or not reciprocal. Reciprocal relations are partners, cousins, neighbours, balances, &c. Relations not reciprocal are cause and effect, father and son, uncle and nephew, king and subjects. The first indeed are more usually called synonimous relatives, or of the same name; the others we call heteronymous, or of a different name.

3. Relations are divided into real or mental: The real relations arise evidently from

the nature of things. These are the whole and part, cause and effect, truth and goodness, &c. as before recited. Mental relations are made only by the mind: These will follow in their due order.

CHAPTER VIII.

OF TRUTH, GOODNESS, AND PERFECTION.

LEST the metaphysicians should take it ill to have these two affections of being, *viz.* truth and goodness, so much postponed, let us name them in the first rank of relative affections, or relations which are real. Truth and goodness are plainly ranked among relative ideas, for they consist in a conformity to some things as their rule and standard. And first let us discourse of truth.

There are various senses wherein the term truth, is used.

1. A being is said to be true in a metaphysical sense, when it is agreeable to the divine idea, which is the grand pattern of all created beings.

2. Things may be said to have a physical or natural truth, as, that is true gold which has all the necessary properties which are usually united in the idea signified by that word.

3. Some things are called true in representation, as when a picture well represents the original, or when an idea in our minds is really conformable to the object of it.

4. Things are said to be true in signification, when the thing signified answers the sign; as when the proper words are used which commonly signify such an idea.

5. There is also logical truth, when the proposition or assertion is conformable to things. And indeed this I think is the most common sense wherein this word is used. The propositions themselves are frequently called truths. Some of these are called probable, some improbable, some certain, *i. e.* according to our knowledge of them. Again, some truths are necessary, such as, There is a God, The whole is bigger than a part, Two and two make four; these are called eternal and unchangeable: Other truths are contingent, as, The sun shone bright to-day, Plato was a philosopher.

6. There is also ethical or moral truth, when our words or actions agree to our thoughts, and our deeds to our words, *i. e.* when we speak or act as we think, or when we believe and practise what we profess and promise. Sincerity is the truth of the heart, and veracity the truth of the lips.

After truth comes goodness.

Goodness is sometimes used in a sense near akin to truth: So the works of God are metaphysically good when they are agreeable to his will and answer his design: When God surveyed all things that he had made, behold they were very good.

Things also are physically or naturally good, when they come up to any supposed standard, or are fitted to answer their end, as good wheat, good gold, a good air.

Artificial things are also good in this sense, as good writing, a good picture, a good clock.

There is another sense of natural good, which is used only with relation to sensible or to rational and intelligent beings, and that is, what is pleasant, or which tends to procure pleasure or happiness.

There is also moral good, which relates only to intelligent creatures, and that is called virtue when it regards our neighbours or ourselves; or it is called religion when it has a regard to God. Moral good in general is when the voluntary thoughts, words, or actions of creatures are conformable to the reason of things, or to the law of God. Which of these two is the chief or original rule of goodness may be debated, though I rather think it is the will or law of God gives the proper obligation to obedience.

Note, It seems most proper to call both natural and revealed religion the law or will of God, though one is manifested to us by the exercise of our reasoning powers, the other by divine revelation.

The good of mankind, or of rational beings, is wont to be distinguished into the supreme or chief good, and the subordinate good: It is either real or apparent: It is present or future: It is also divided into *bonum jucundum, utile, et honestum, i. e.* pleasant, profitable, and honourable. The two first of these come under the idea of natural good, the last is near akin to moral good, though perhaps not exactly the same.

Note, The word goodness is also used in somewhat a different sense when it signifies wishing or doing good to others; then it is called kindness or benevolence. This belongs either to God or creatures: It comes nearest to the idea of moral good, though it promotes natural good, as it is that which tends to procure the pleasure or happiness of other beings.

Any thing that is excellent in its kind is vulgarly called good, whether it be natural, artificial, or moral.

Note, What truth is to the mind, that is good to the will, *i. e.* its most proper object.

According to some of these divisions of truth and goodness, it may be proper also to shew what is falsehood, and what is evil, which are their contraries: And here the moral ideas of vice and sin may be introduced, which is the unconformity of our voluntary thoughts, words, or actions, to the laws of reason, or to the revealed will of God.

Here we might say, as duties and virtues consist either in action or in abstinence, so sins are distinguished into those of omission or those of commission.

We might remark also concerning good and evil, that of several good things the greatest is to be chosen, and of several evils the least. But these thoughts belong rather to moral science.

Let us proceed now to consider what is the true idea of perfection.

When metaphysical or physical truth and goodness are united in any being, it is called perfect, *i. e.* it contains all the parts and properties which belong to the essence or nature of that thing, without defect or blemish, it comes up to its standard, and it is fitted to answer all its designed or proper ends.

Where any of these are wanting, the being is called imperfect.

A being may be called perfect absolutely in all respects; and that belongs to God alone: It may be said to be perfect in its own kind, as a perfect cube, or triangle, or circle; that is a perfect rainbow, which has all its colours, and reaches from side to side of the horizon: Or it may be called perfect comparatively; that is a perfect image, statue, or picture, which has no sensible defects or unlikeness to the original, and is superior to all others: So established and knowing Christians are called perfect in scripture, in comparison of novices.

Again, A being is perfect either as to parts or as to degrees; an infant is a perfect

man as to his parts, but his degrees of growth, or of power to stand, to walk, to reason, &c. are imperfect.

Yet further, a thing may be perfect as to quantity and measure, as a horse of full grown stature; but this horse may not be perfect as to the qualities and powers of beauty or swiftness. So fruit may be perfect as to its size, but not as to its ripeness.

In the last place, things are yet said to be perfect with regard to all their essentials, *viz.* the natural parts and properties which make the thing be what it is, as a garden just laid out and planted; or it may be perfect with regard to all circumstantials also, which give that thing beauty, ornament, honour, conveniency, &c. such as well grown fruit-trees, shady walks, summer-houses, green-houses, &c. make a perfect garden.

The word perfect is sometimes used for excellent, as when we say, beasts and birds are more perfect than fishes; spirits are more perfect than bodies; and men more perfect than brutes.

CHAPTER IX.

OF THE WHOLE AND PARTS.

A BEING is said to be a whole when it is considered as consisting of the several parts of it united in a proper manner. And consequently parts are beings, which united constitute the whole.

There are four kinds of whole reckoned up by writers on this subject, *viz.* formal or metaphysical, essential or physical, integral or mathematical, and universal or logical. See Logick, Part I. Chap. IX. Sect. 7. These are the terms in which the schools have expressed these distinctions; and since most of the distinctions are useful, it is not necessary to change the terms, though some of them may be applied in a little more proper and perspicuous manner.

A formal or metaphysical whole, is the definition of a thing, whereof the genus and the difference are the two constituent parts. See Logick, Part I. Chap. V. Sect. 4. I think this is no useless distinction.

An essential or physical whole is wont to be applied to natural beings, all which were supposed to consist of matter and form: And thence it is applied to man, consisting of body and soul, which the peripatetics called the matter and form of man. But I think the sense of it may be better changed or enlarged to include the substance, with all the essential properties of a thing, which joined together make up the whole essence of it.

An integral whole, is, when any thing is made up of several parts, which have a real and proper existence in nature, and are quite distinct from each other; as the body of man is made up of trunk, head, and limbs; an army is made up of soldiers; number is made up of units, and a day of hours; a book is made up of pages, a page of words, a word of letters; and speech is made up of articulate sounds.

Note, This is called a mathematical whole, when it is applied to number, time, dimension, body, or any thing that hath proper quantity, but the term integral may have a wider extent.

An universal whole, is a genus which includes several species, or a species which includes several individuals. This belongs chiefly to logick; and therefore it is called a logical whole.

Though spirits have properly no quantitative parts, and therefore cannot be called a whole of the mathematical kind, yet the terms whole and parts may be applied to them in all the other senses: As for example, 1. Metaphysical; so a thinking substance is the whole definition of a spirit; substance is the genus, and thinking the difference. 2. Physical or essential; so a spirit is a whole, and perception, judgment, reason, and will, may be called its essential parts or powers, without excluding immateriality and immortality, as its properties. 3. Integral; so we say, A whole army of angels, A whole heaven of blessed spirits. 4. Universal or logical; so a spirit is a genus or generic whole, human souls and angels are the species, or special parts.

As for man, who is a compound being, made up of body and soul, I think he may be called as properly an integral whole, and then we leave the term essential whole to signify only a substance with all its essential properties.

Query, When we say, One of Tully's orations is made up of happy thoughts, just reasonings, warm persuasives, beautiful transitions, pure language, and well-sounding periods; are these integral or essential parts, and how is the whole to be denominated? But let us proceed.

Parts are either homogeneous, *i. e.* of the same kind, as branches are parts of a tree; or heterogeneous, *i. e.* of different kinds, as the several limbs and bowels are parts of an animal. And even homogeneous parts may be similar or dissimilar in several circumstances, as the branches of a tree may be fruitful or unfruitful, long or short, vigorous or withering.

Note 1. That which is a whole in one sense, may be a part in another. This whole globe of earth is a part of the universe.

Note 2. The whole is bigger than each part taken separately, and equal to all the parts taken conjunctly.

Note 3. The part of a part is also a part of the whole. A finger is a part of the body, because it is a part of the hand.

CHAPTER X.

OF PRINCIPLES, CAUSES, AND EFFECTS.

A PRINCIPLE may be with sufficient propriety distinguished from a cause, as a general nature from one special kind. Principles are any sort of springs whatsoever, either of essence or existence, of knowledge, or of operation.

First, Principles of essence or existence are either, 1. Continent as herbs, minerals, metals, are principles of medicines, for they contain in them the juices, oils, spirits and salts, and medicinal extracts, which are drawn from them by the chymists: Or, 2. Principles are constituent; as compound medicines are made of several simples, as their principles; or as matter and form are the constituent principles of particular bodies; or as stone and timber of a house, or as any parts of a thing are constituents of the whole: Or, 3. Principles are causal; such are all the tribes of causes, to be mentioned hereafter.

Secondly, Principles of knowledge are either internal, as perception, reason; or

external, as objects, books. Both these are either natural, as sense, sensible things; or supernatural, as visions, inspirations.

Again, Principles of knowledge are more simple, as ideas, or words, or letters; or they are more complex, as propositions, and particularly such as are self-evident, as axioms, or such as contain the chief truths or rules of any doctrine, art, or science.

Thirdly, Principles of operation may sometimes include the beings themselves which operate, as writers, warriors, &c. as well as their natural powers, *viz.* hands, strength, skill, &c. and their moral powers, *viz.* law, authority, &c. and supernatural principles, *viz.* revelation and divine influences.

Almost all principles, except the constituent and continent, may be reduced to some or other of the kinds of causes.

A cause in general is a principle distinct from the thing itself, and hath some real and proper influence on the existence of that thing. An effect is that which is produced, done, or obtained by the influence of some other being, which is called the cause.

First note, No being can properly be the cause of itself: Yet a fountain may be the cause of a river, though the water in both may be the same materially, but not formally; for a fountain springs out of the earth, a river runs along on the earth, between a length of banks.

Second note, Every being, besides the first being, wants a cause; God, the first being, is self-existent or independent, and has no cause: He exists from a necessity of nature and self-sufficience, yet not properly as the cause of his own being; but all other real beings are derived from him as from their cause.

Third note, The same thing in different respects may be both a cause and an effect. Clouds and vapours are the effects of the sun, but the cause of rain.

Fourth note, A cause is in order of nature before its effect, but not always in time. For a fire gives heat, and a star gives light, as soon as they exist.

Causes in general may be divided many ways:

1. Into universal and particular: The sun, earth, rain, are all universal causes of plants, herbs, and flowers; for by the same sort of influences each of them produce various and different effects: But the particular seeds are the particular causes of each different herb and flower. Common and proper causes are very near akin to the former distinction.

2. Causes may be divided into remote and proxime; as an infectious air or east wind may be the remote cause of the death of men; but the several diseases arising thence are the proxime causes. A father is the proxime cause of his son, a grandfather the remote cause.

3. Causes are univocal, as when a lion produces a young lion; when a fountain of water sends forth a stream of water; or when money being lent, gains money by interest: But they are equivocal when a man writes a book, when a root produces a stalk and leaves, or when money buys land. In the three first the effect is of the same nature with the cause; in the three last it is different.

4. Again, Causes are sole or solitary, as when a horse alone eats a gallon of corn; or social, when a hen and chickens share it among them. So a pestilence is a solitary cause when it destroys a city; but when an army, made up of officers and soldiers, conquer it, these are social causes.

Social causes are either co-ordinate, as common soldiers fight a battle, or subordinate,

as the several degrees of officers, *viz.* colonels, captains, lieutenants, and the common soldiers under them. Among subordinate causes we sometimes consider the first, the last, and the intermediate; whether one or more.

Note, In causes acting by a necessary subordination, the cause of a cause may be justly deemed the cause of the effect. The man who throws in the firebrand, which kindles the gunpowder, which blows up a ship, is the cause of the death of the sailors.

Note, In subordinate causes you must at last come to a first cause, for there is no infinite or endless subordination of causes.

Query, If a round chain of many links were used to bind a vessel of liquor instead of a hoop, is not each link subordinate to its neighbour in their influence? And which of all these is the first cause? *Answer*, These are all co-ordinate and not subordinate causes; though they are dependent, yet it is on each other mutually, and they are all equally dependent.

5. Yet further, causes in general may be divided into total and partial. An absolutely total cause is much the same as a sole cause: But a cause may be total in its own kind, though many other causes concur to produce the effect. Alexander the king, Apelles the painter, his idea, his hand, and his pencil, are each a total cause of Alexander's picture, for each of these is single and alone in their distinct influences: But the several colours are partial causes, for they have all the same influence; and so are the fingers of the painter, for they all join their service in guiding his pencil.

6. Causes are also distinguished into physical, which work by natural influence; and moral, which work by persuasion.

7. A cause is called ordinary, when it works according to the usual course of nature, as when animals produce their own kind: It is extraordinary or miraculous, as when the rod of Moses produced swarms of lice in Egypt.

After all these distinctions of causes in general, let us now come to distribute causes into their chief particular kinds. Instead of dividing them into those common branches of material and formal, efficient and final, it may be much more proper to leave out matter and form, as not being properly causes, and then we may distribute the rest into four kinds, *viz.* emanative, efficient, instructive, and suasive: And as I think none of these are included properly in each other, so these include all the various ideas of positive proper causes in the most natural and easy view and order.

First, An emanative cause is, when the effect flows from it without any action to produce it, supposing only that all obstructions be removed. So water flows from a spring, so heat from the fire, or a fragrant scent from spices. This might perhaps be reduced to the rank of continent principles whence any thing proceeds, though it much better deserves the name of a cause than matter and form, which are only constituents, and are the effect itself. It belongs chiefly to natural and necessary causes to have the title of emanative. Sometimes the effect is coeval with the emanative cause, as light and heat flowing from the sun, or a sweet smell from a violet. Sometimes the cause is prior to the effect, as when a plant springs from the seed, or leaves and fruit from a tree, or a long river from a distant fountain.

Query, Whether some of those which are usually called emanative causes, because their agency is more insensible and unnoticed, be not as properly ranked among the efficient causes? Such as, the sun in emitting its rays, which give both light and heat,

and produce innumerable effects throughout the earth and all the planetary worlds; is it a mere emanative cause of light and heat? *Answer*, This may be debated in physiology, if it be worth a debate.

Secondly, An efficient cause most properly deserves the name of a cause, because it produces the effect by some sort of active power or natural agency; as when an archer bends his bow, or when the bow gives flight to an arrow, or when an arrow strikes the mark. All these three are distinct efficient causes with their distinct effects.

Efficient causes have many divisions.

1. Efficient causes are either first or second. The first cause is either absolutely so, which is God alone, and all creatures are but second causes: Or it is first in its own kind; so a gardener is the first cause of the growth of trees in the garden which he hath planted; all his under agents, whether diggers, waterers, or weeders, are second causes.

2. The next division, near akin to the former, is when efficient causes are distinguished into principal, less principal, and instrumental. The principal cause of building a house is the architect; the less principal are adjuvant or assistant causes, such are bricklayers, carpenters, labourers, &c. the instrumental causes are hammers, axes, trowels, &c.

3. Efficient internal causes are distinguished from external; when the inward humours of the body produce pain or death, it is different from the case when outward wounds or bruises produce the same effects.

4. Efficient causes may be exciting and disposing, as when hunger excites a horse to eat, or a farmer holds hay to his mouth: But when a farrier constrains him to take a drench, this is a compelling and constraining cause.

5. A cause is forced, as when a man driven by robbers runs in at his neighbour's window by night for shelter: Or it is free, as when a robber breaks into the house to plunder it.

6. Yet further, efficient causes may be necessary, as when the sea drowns a child who falls into it; or contingent, as when a tile falls from a house and kills a child; whereas it might only have wounded him, or perhaps not hurt him, or never touched him.

7. Again, Causes may be accidental, as when a boy throws a stone at a bird and breaks a window: But when he doth mischief on purpose, the cause is designing, and the effect is designed. When a groom leads a lame horse to water, the groom is the designing cause of the horse's walking, but he is only the accidental cause of his halting. The famous pair of causes which in the schools is called *Causa per accidens* and *Causa per se*, may be applied to these two or three last distinctions of efficient causes.*

8. Again, Efficient causes may be either procuring or confirming, preventing or removing. So medicines confirm or procure health, and prevent or remove diseases.

9. Efficient causes may be creative, conservative, alterative, or destructive. The very names of these describe them sufficiently.

Note, Here might be introduced that famous axiom of the schools, that every cause contains its effect, or that there is nothing in the effect which was not in the cause: But this must not be understood always formally, as a fountain contains water, but sometimes

* I know accidental and contingent causes are much the same: but I thought it more proper here to multiply the divisions of cause than to crowd all these causes, namely, forced, free, designing, contingent, and necessary, into one division, because some of them have two or three opposites, and have their ideas a little distinct, which best appears in distinct pairs. See more in the chapter of Act and Power, Necessity and Freedom.

only eminently, *i. e.* as the root of a tree contains leaves and fruit, because it can produce them; and indeed when we search this axiom to the bottom, it means nothing more than that every cause can produce its effect, which is a very dilute and insipid canon, because it is contained in the very definition of a cause. Besides it is a very odd and uncouth manner of speaking, to say, that a whetstone contains in it the sharpness of a scythe, not formally but eminently, because it can make a scythe sharp. Yet this is the case in a multitude of these metaphysical axioms; I mention this only as an instance at present, and as a reason why I have passed so many of them over in silence.

Thirdly, The third kind of cause is an instructive cause. This works either by way of manifestation of truth, or direction in practice, and may be called manifestative or directive.

1. In the manifestation of truth this cause sometimes operates in silence; as a book, or diagram, a picture, a map, a mariner's compass, or magnetic needle: Sometimes it is vocal; as a tutor, or a watchman in the night, or perhaps a cuckow giving notice of the spring, or a crowing cock of the morning.

2. In the direction of practice this cause is either a rule which teaches us to act, whether by speech or writing; or it is a pattern or example for us to imitate and copy after. Sometimes this is a living example, which by acting shews us to act the same; or it is a guide which seems to include both the former, *viz.* teaching and shewing, or rule and example.

Many times the instructive causes which primarily manifest truth are in some sense directive also, as they are designed also ultimately to direct our practice; so a mariner's needle pointing where the north lies directs the pilot to steer the ship.

Note, Active instructive causes approach toward the idea of an efficient cause; the unactive are quite distinct.

Note, All this sort of causality works its effects chiefly in intellectual agents.

Query, But may not an instructive cause sometimes be attributed to brutes? Dogs or horses will teach one another what man has taught them.

Note, The word directive may sometimes be applied to physical causality, as when a pilot or steer's-man guides a ship by the rudder, or when a tube or ring guides an arrow to the mark, when a canal conveys water to a cistern, or when any hard body by repelling or reflecting determines any moving body to a particular point. But all these are more properly ranked under efficient causes than directive, because they do it by mere mechanism, without so much as the appearance of any intellectual influence upon the thing directed, and can never be called instructive.

Query, When a sun-dial shews the hour, the sun and the style of the dial seem to be social efficient causes; the sun by giving light, and the style by limiting it with shade: But what sort of cause is the dial-plane? Is it not instructive?

Fourthly, A suasive cause is properly something from without, which being apprehended by the mind, excites or inclines a voluntary or free agent to act, and it works either by intreaty or authority, by commands or counsels, by promising or threatening, by rewards or punishments, by fear or hope, or any other motives, all which are called moral agency or influence.

Suasive causes are either personal or real. Personal are chiefly such as these, *viz.* author or persuader, commander, encourager, &c. Real suasive causes are the end or design, the object, occasion, opportunity, merit, or demerit. Any being, appearance,

or circumstance whatsoever, that tends to influence the agent in a moral way, *i. e.* to affect and persuade the will, may be properly called a suasive cause.

This sort of causes belongs also chiefly, if not only, to intellectual and voluntary agents.

Yet it may be queried, whether a pond inviting a horse to drink be a suasive or an efficient cause? Is the influence of this object on the animal properly natural or moral? Food inviting a hungry man to eat, has certainly both a natural and a moral influence, because he has both animal nature and reasoning powers.

The end or design is one of the chief of suasive causes. This is usually called the final cause, and makes a considerable figure in the doctrine of causes. It is defined, that for the sake whereof any thing is done. An artificer labours hard, his end is to procure bread; his labour is called the means. The end is the cause, the means the effect.

Under the idea of an end, all the doctrine of final causes, with all their divisions, should be introduced.

1. Here, therefore, comes in first the distinction of ultimate end or subordinate: An ultimate end is either absolutely so, such is or should be the end of all our actions, *viz.* the glory of God and our own final happiness, or it is ultimate in its own kind; so learning or knowledge is the chief end of reading. Subordinate ends are such as tend to some further end, as knowledge is sought in order to practice; practice in order to profit and pleasure in this life, or preparation for the life to come.

Note, There may be many co-ordinate ends of the same action, which are not subordinated to one another. A man rides on horseback, for his pleasure, for his health, and for a visit to his friend. If one of these ends be much superior in his eye to the others, that is called the primary end, others are but secondary, though not subordinate.

2. The end is considered as in the intention of the prime efficient, or in the execution. In the intention it moves or excites the efficient cause to act by a moral influence, and it is in this view it properly comes in among suasive causes. But in the execution it becomes the effect of the prime agent by a natural influence or causality.

3. Another manifest distinction of final causes is into such as are private and concealed, or such as are public and avowed.

4. There is another distinction, which the schools call *finis cujus*, *i. e.* the end or design of the workman, and *finis cui*, which is the end or design of the work. A clock-maker's design is gain, but the design of the clock is to shew the hour.

First query, Are brutes influenced by final causes? Their actions look very like it. But doth not acting for some design or end imply reasoning? Is this reasoning in themselves, or in their Maker only? What is it then in the brutes themselves? Can mere instinct or mechanism perform all these operations?

Second query, Is it not an evident truth that all causes must have a being before they can act, at least in order of nature though not always in time? But may not many suasive causes act before they exist? As for instance, a thief is tempted to provide a ladder to-day, because there will be an opportunity at night to come over the garden wall. And do not final causes always act before they exist, since the action of the efficient is designed to produce their existence as the effect?—*Answer*. All suasive

causes act by the idea of them existing in the mind, whether the things themselves exist or no.

First note, The end and the means are mutually cause and effect to each other. When the end is considered as a suasive cause, the means are the effect; but when the end is considered as the effect, the means are an instrumental or subordinate efficient cause, under the influence of the principal efficient.

Second note, The end reconciles the agent to those means which may be painful and unpleasant, and it regulates and limits the use of means. A sick man who seeks health is persuaded to use blisters or bitter potions, and his use of them is regulated and limited by the view of health.

Third note, In the series of final causes subordinate to each other, that which is last in execution is generally first or chief in the intention; but it is not always so; for when the chief end is obtained, lesser ends may be sometimes pursued. I retire into the country chiefly for my health; but when I am well, I design also to visit my friends there, and I seek my health partly with that design.

Besides these four kinds of causes, which have a plain, a positive, and direct influence upon the effect, there are some other principles which also have their distinct sorts of influence, though not in so positive and direct a manner: Yet they have been dignified with the title of causes, for want of a fitter name. The chief of them are, a deficient cause, a permissive cause, and a condition.

First, A deficient cause is when the effect owes its existence, in a great measure, to the absence of something which would have prevented it; so that this may be reckoned a negative rather than a positive cause: The negligence of a gardener, or the want of rain, are the deficient causes of the withering of plants: And the carelessness of the pilot, or the sinking of the tide, is the cause of a ship's splitting on a rock: The forgetfulness of a message is the cause of a quarrel among friends, or of the punishment of servants: The not bringing a reprieve in time is the cause of a criminal's being executed, and the want of education is the cause why many a child runs headlong into vice and mischief: The blindness of a man, or the darkness of the night, are the causes of stumbling: A leak in a boat is a deficient cause why the water runs in and the boat sinks; and a hole in a vessel is called a deficient cause why the liquor runs out and is lost. Man is the deficient cause of all his sins of omission, and many of these carry great guilt in them.

Secondly, A permissive cause is that which actually removes impediments, and thus it lets the proper causes operate. Now this sort of cause is either natural or moral.

A natural permissive cause* removes natural impediments or obstructions, and this may be called a deobstruent cause. So opening the window-shutters is the cause of light entering into a room: Cleansing the ear may be the cause of a man's hearing music who was deaf before: Breaking down a dam is the cause of the overflowing of water and drowning a town: Letting loose a rope is the cause of a ship's running adrift: Leaving off a garment is the cause of a cold and a cough: And cutting the bridle of the tongue may be the cause of speech to the dumb.

* If the word deobstruent were always used to denote a cause removing natural obstructions, then we might leave the term permissive only to signify moral causes of this kind.

Note, The cause which removes natural impediments, may be a proper efficient cause with regard to that removal, yet it is not properly efficient, but merely permissive with regard to the consequences of that removal.

A moral permissive cause removes moral impediments, or takes away prohibitions, and gives leave to act: So a master is the permissive cause of his scholars going to play; a general is the same cause of his soldiers plundering a city; and a repeal of a law against foreign silks is the permissive cause why they are worn.

Query, Was not God's permission of Satan to afflict Job, rather natural than moral, since his mischievous actions did not become lawful thereby, and since it is now become his nature to do mischief, where he has no natural restraint.

Thirdly, A condition has been usually called *causa sine qua non*, or a cause without which the effect is not produced. It is generally applied to something which is requisite in order to the effect though it hath not a proper actual influence in producing that effect. Day-light is a condition of ploughing, sowing, and reaping: Darkness is a condition of our seeing stars and glow-worms: Clearness of the stream is the condition of our spying sand and pebbles at the bottom of it: Being well dressed with a head uncovered is a condition of a man's coming into the presence of the king: And paying a peppercorn yearly is the condition of enjoying an estate. How far the perfect idea of the word condition, in the civil law, may differ from this representation is not my present work to determine.

Note, These three last causes may possibly be all ranked under the general name of conditions; but I think it is more proper to distinguish them into their different kinds of causality.

CHAPTER XI.

OF SUBJECT AND ADJUNCT.

THE greatest part of what is necessary to be said on this theme may be found in Logick, where it treats of substances and modes: But in this place the word subject is more usually considered as having accidental modes relating to it, than those which are essential, for so the word adjunct means here.

As a being or substance may be a subject of inhesion, adhesion, or of denomination, so adjuncts may perhaps sometimes be used in a large sense, to include some internal qualities which may inhere in the subject; but the word more generally stands distinguished from inherent qualities, and signifies more properly external additions or appendices, which adhere to the subject, or names and denominations by which it is called.

The most considerable adjuncts of all appearances or actions are what we call circumstances, which include time, place, light, darkness, clothing, the surrounding situation of things, or persons, and the concomitant, antecedent, or consequent events.

When the word subject signifies a subject either of occupation, of operation, of thought or discourse, it may be properly also called an object; as a house or timber are subjects or objects on which a carpenter works, about which he is occupied, or of which he thinks or discourses.

Objects are either immediate and proxime, or mediate and remote. The pages and

words of a book are the immediate object of a student's occupation; notions and opinions, arts and sciences, are the remote object, because they are taught by these pages. So a displeased superior is the remote object of my addresses, but the mediator by whom I hope for reconciliation is my more immediate object. I send letters to my friend remotely, but I deliver them immediately to the post.

Again, Objects are either common or proper. The shape, and motion, and size of bodies, are common objects of two different senses, *viz.* of sight and feeling: Colour is the proper object of sight alone; sound of hearing; and cold of feeling.

The subjects of which several sciences treat are called their objects: These are either material or formal. The body of man is the common material object both of anatomy and medicine; though one considers it as a curious engine whose parts are to be dissected and known, the other views it as capable of diseases and healing; which two considerations added to the human body, constitute the proper and formal objects of those two sciences.

CHAPTER XII.

OF TIME, PLACE, AND UBIETY.

TIME is esteemed a relative affection, for it commonly refers to something that measures it.

Time is finite and successive duration, and it is distinguished, as I have before observed, into past, present, and future; it is usually measured by the motion of some bodies, whose motions are supposed to be most regular, uniform, and certain. And for this reason, mankind have generally agreed to measure time by the revolution of the heavenly bodies, sun, moon, and stars; and God himself appointed them for this end: Thence centuries, years, months, weeks, days, hours, and minutes, have their rise.

But amongst the ruder and more untaught parts of the world, both in ancient and later ages, time has sometimes been measured by any of those things which are supposed to keep their regular returning periods and seasons; as cold and heat, snow and ice, periodical rains or winds, particular fruits, corn, harvest, the coming or departure of certain birds to particular countries, or fish to particular coasts.

All the things before mentioned are a sort of natural measures or determinations of times and seasons: But hourglasses, by sand or water, clocks, watches, &c. are artificial measurers of time, and some of them perform it with greater exactness even than the motions of the heavenly bodies, at least in their appearances to us on the earth.

As for the time or duration of spirits while they are united to human bodies or vehicles, or make their appearances on earth, it is measured by some of the things we have mentioned: But the duration or time of those spirits which have no relation to our world, must be measured in some other manner, which at present we know not.

Here is a famous question, whether God's duration or eternity be not coexistent with our time, and the duration of the world, and whether such a part of eternity be not commensurate therewith? It is evident this is our common idea of it. But it is hardly just, for in truth eternity is an idea above our present reach, and we lose ourselves in an abyss, when we wander into it. See the Chapter of Duration, and the Chapter of Infinites.

A moment is called the least part of time: So an atom is the least part of matter. But modern philosophers suppose all sort of quantity to be infinitely divisible, whether it be magnitude, which is called permanent quantity; or time, which is called flowing quantity; and then there is properly no atom, no moment.

Place, or situation, is a relative idea: For it is generally described as that relation of proximity or distance which any being bears to the visible bodies that are round about it, and are usually esteemed quiescent, or at rest.

Place is distinguished indeed by many modern philosophers into absolute and relative: Absolute place is made to signify that part of the supposed infinite void or space, which any being fills up and possesses. And relative place is the situation of a being among other bodies, which are looked upon as quiescent; and it must be granted we usually conceive things in this manner: But if space be a creature of the imagination, and a mere idea, or nothing real, then all place is properly relative, and a body existing alone has no place.

The place of a spirit has been often called *ubiety*, which may most properly refer to so much of the material world, of which it has a more evident consciousness, and on which it can act: In God, the infinite Spirit, his *ubiety* is wheresoever there are objects for his consciousness and activity: And you may extend this to all possible, as well as real and actual worlds, if you please; for he knows and he can do whatsoever can be known or can be done, and therefore he is said to be every where. But with regard to conscious beings, whether created or increated, I confess I have no clear idea how they can have any proper locality, residence, situation, nearness, or juxta-position among bodies, without changing the very essence or nature of them into extended beings, and making them quite other things than they are.

When we say God the infinite Spirit is every where, let it be understood therefore, that in a strict philosophical sense we mean that he has an immediate and unlimited consciousness of, and agency upon all things, and that his knowledge and power reach also to all possibles, as well as to all actual beings. When we say the soul of man is in his body, we mean, it has a consciousness of certain motions and impressions made on that particular animal engine, and can excite particular motions in it at pleasure. What further ideas are contained in the *ubiety* of spirits I know not.

When we consider bodies as present in a place by their proper situation, this may be called a circumscriptive presence: A spirit's presence in a place by consciousness or operation, hath been called a definitive or limited presence; because its consciousness and operation are not universal or infinite: God's omnipresence, or his being every where, hath been termed his repletive presence, because the scripture says, *God fills heaven and earth;* though this term perhaps does not properly answer the philosophical idea, yet it may be used in a vulgar and figurative way of speaking, which is perfectly agreeable to the language and design of the sacred writers.

CHAPTER XIII.

OF AGREEMENT AND DIFFERENCE, OF SAMENESS, AND THE DOCTRINE OF OPPOSITES.

THE agreement and difference of things are found out by that act of the mind which we call comparison, wherein we compare one thing with another; but we sometimes

also compare the same thing with itself at different times or places, or as vested with different qualities, or under different circumstances, or considerations, and in different respects, and so we say a thing agrees with, or differs from itself.

Agreement is either real, that is in substance; or modal, that is in modes, propties, or accidents; or it is mental, *i. e.* such as is made only by our conceptions.

Again, Agreement is either internal, *i. e.* in essence, in quantity, or in quality; or it is external, that is, in causes, effects, adjuncts, circumstances, and names.

Yet further, agreement is either total and perfect, when there is no manner of difference; or partial, which admits a difference in some respect. Perfect agreement in the highest degree, is usually called sameness, yet this word is sometimes used also to signify lower degrees of it.

Sameness or identity is attributed to things which agree in essence, or have an essential agreement; but agreement in quality is properly called likeness.

An agreement in quantity, if it be perfect, is sometimes called sameness, but more properly equality. Agreement in value requires an agreement in quantity, where the quality is the same; so five shillings is the same with a crown, or equal to it, *i. e.* it is the same quantity of silver. But sometimes agreement in value arises from the difference of quality compensating the excess or defect in quantity; so a guinea of gold is equal to twenty-one shillings in silver.

But if the agreement in quantity be not absolute and perfect individual sameness, it is called proportion; so we say there is a proportion between sixteen and twenty-four, for one is two-thirds of the other; and so there is between three fives and fifteen, for they are equal.

Agreement in shape or figure is usually called similarity; so two equilateral triangles are similar figures.

Two or more things may be said to have the same general essence or nature; so beasts, birds, fishes, agree in that they are animals: Or they are said to have the same special nature; so hounds and spaniels agree in that they are dogs; Peter and Paul agree in that they are men. But it is only one thing has the same individual nature or essence with itself, as Methuselah when a boy, a youth, and an old man, is the same. Hence arise the ideas of generical, specifical, and numerical or individual sameness.

Again, Sameness is either material or formal. Wheat is the same body materially when it is a heap of grains, as when it is ground and moulded into bread, but it is not formally the same.

One would think it a very easy question, Whether a thing be the same with itself or no? But whosoever will read what Mr. Locke has written upon identity in Chap. XXVII. Book II. of his *Essay*, will think it a sort of insolvable difficulty in some cases, and almost an impossible thing to answer that query in some particular instances, especially relating to men, animals, &c. This question, in the language of the schools, is, What is the principle of individuation? *i. e.* What is necessary to make a thing the same with itself?

Here we may consider the sameness of single bodies, as a grain of wheat; of aggregates, as a heap of sand; of compounds, as a house, a garden: Here inquire how small or how great a difference will hinder these from being called the same.

Again, let us consider the sameness of rivers, vegetables, and animals, each of which samenesses consists in very different ideas, and some are difficult to adjust.

Consider yet further the sameness of spirits, which consists in the same thinking power or substance; and the sameness of persons, which consists chiefly in the very same consciousness, the same self, or rather in the same single conscious principle.

Consider here also the sameness of mankind, when body and soul are united, or when divided; when fat and lean; when infants or in old age; and the sameness of our bodies in the resurrection with what we now have. All these will afford sufficient labour for philosophy and reason to hunt after the clear and distinct ideas of them. Mr. Locke in this chapter has some excellent reasonings, though I cannot assent to all his sentiments entirely. See Essay XII. Section *ult.*

Similitude, or likeness, is an agreement chiefly in qualities, though sometimes it relates also to essences, natures, and substances. This may be total and complete, or partial or gradual. There is also likeness in the same kind, as one picture is like to another; and likeness in a different kind, as a picture to a statue, or poesy to painting, or verse to music; which sort of likeness is sometimes called cognation or analogy.

The word analogy at other times stands for proportion; our idea whereof chiefly arises from our comparison of two quantities together, and considering the relation they bear to each other: Now this is properly a relation of agreement, and not of difference; and I think we may say, that proportion includes every sort of agreement in quantity, besides perfect and individual sameness, whether this quantity be magnitude, or number, or time. Hence arise the ideas and terms, equal and unequal, greater and less, more or fewer, &c. but it is not necessary for us here to enter into the mathematical distinctions of proportion, whether arithmetical or geometrical, whether direct or inverse, which belong only to those sciences.

The idea of proportion may also be applied to any qualities whatsoever, which admit of gradual differences, and to which the ideas of more or less may be attributed, as whiteness, cold, good, evil, &c. This proportion is either equality, excess, or defect; signified, *v. c.* by the words, as white, whiter, or less white. Herein the science of grammar uses its positive and comparative names. Where the excess or defect is extreme, as in whitest or least white, it is called the superlative.

Having spoken so much of agreement, we should say something of disagreement or difference too. Observe that difference in this place is not the same idea with that which is mentioned in Logick as the primary essential mode of any being, and which is joined to the genus to make a definition. See Logick, Part I. Chapter VI. Section 4. But difference here includes every distinction of one thing from another. The pointing out of this difference is properly called distinguishing.

Difference or distinction is either real, *i. e.* substantial, as one substance differs from another; or it is modal, as modes, properties, or qualities differ from the substance, or from one another; or it is mental, which is made only by the mind of man. And indeed difference or disagreement may admit of most or all the same divisions which belong to the idea of agreement, which we need not stand to repeat.

Note, Things which really differ may exist separate, but modal or mental difference between things is not sufficient for the separate existence of both.

Note, The difference between modes or properties is sometimes called a real difference because it is founded in the real nature of things, and so it stands in opposition to mental which is merely the work of the mind of man, making distinctions, where things are really the same.

Disagreement in substance or essence is properly called diversity; in quality, it is dissimilitude; in quantity, it stands in opposition to sameness, and then it is peculiarly called difference; or it may sometimes stand in opposition to proportion, and then it may be called disproportion; as, there is a disproportion between finites and infinites; *i. e.* there is no proportion between them.

The word disproportion is generally used in a more vulgar sense: It signifies sometimes a very great difference between two quantities or numbers; as two is disproportionate to two thousand: Sometimes it means, that one part or adjunct of a thing is too big or too little for the others; so we say that the large nose of Naso was disproportionate to his face, or the small garden of Dioclesian was disproportionate to his former palace.

These two following notes, concerning agreement and difference, belong eminently to Logick, and shew the reason of using a middle term in ratiocination.

1. In whatsoever two things agree to a third, they also agree so far among themselves. This is the foundation of affirmative syllogisms.

2. In two things whereof one differs from a third, while the other agrees to it, these two differ so far among themselves. This is the foundation of negative syllogisms.

Let us proceed now to consider opposition, which is counted one of the chief or highest kinds of difference or disagreement.

There are five sorts of opposites, which are generally mentioned here, *viz.* Disparates, as green, yellow, red, blue, &c. contraries, as white and black: Relative opposites, as father and son: Privative opposites, as sight and blindness: And negative opposites, *i. e.* contradictories, as power and impotence, perfect and imperfect, or seeing and not seeing.

But of these five perhaps three are sufficient: For disparates should not be properly called opposites, since they are only different species under the same genus. Nor can all relatives be properly called opposites, as when two eggs are said to be like each other, or two friends who are entirely unanimous and agreeing in their humours.

We may observe here, that among contradictories some are express, others are implied. It is an express contradiction to talk of a godly atheist, though one expression be English and the other Greek; for it signifies a man that owns no God, and yet owns and honours him. But a godly hypocrite is but an implicit contradiction, and so is a religious villain, one who owns God in words, but in works denies him.

It may be worth while also to take notice of two sorts of contraries, *viz.* They are termed mediate where there is some middle being or quality that partakes of both the extremes; as lukewarm, between hot and cold; and grey, between black and white. They are immediate where there is no such middle being or quality; as straight and crooked.

Note 1. Contraries mutually abate or destroy one another. Black and white mingled, do by degrees take away the whiteness, or blackness of the object: So heat and cold: So virtuous and vicious dispositions.

Note 2. Contradictories can have no proper medium: A chamber is square or it is not square; a man can see or he cannot see.

Note 3. All opposites placed near one another give a mutual illustration to each other, and make their distinct characters appear plainer. Hence proceeds the reason of foils among painters and jewellers, orators and poets.

CHAPTER XIV.

OF NUMBER AND ORDER.

NUMBER and order are the last among the real relative affections.

Number is a manner of conception, by which we reckon things together, and consider them as more or fewer.

Every thing indeed exists singularly, or as an unit; and so it may be an absolute idea; but as one or unit is part of a number, so it is relative; and since many units do really exist, so the idea of number is a real idea, or a real relation derived from their being more than one.

Number is made up of many units put together, and therefore some ontologists may choose to treat of it in the chapter of Unity; but it plainly denotes a relation between two or more beings or ideas.

Number by the schools is called discrete quantity, as a heap of acorns, a row of trees; whereas, magnitude is called continual quantity, whether it be in a rock or a river, though one be fluid, the other solid.

Note 1. Number is needless where unity is sufficient for the same ends; and a greater number is needless where a less is sufficient. Nature generally is observed to work in the most simple ways and manners. What infinitely various purposes in the whole universe of bodies does that one simple principle of gravitation serve to execute.

Note 2. Therefore in our solving any difficult appearances, we should not multiply beings without necessity. This has been the unhappy cause of introducing into the schools of science so many principles which have no being in nature; such as substantial forms, occult qualities, *materia prima*, real space, substance in general, that is capable either of cogitation or solidity, &c.

Now let us proceed to speak of order.

The idea of order is derived from the consideration of one thing as being before another, or after another, or together with it. The terms used on this occasion are prior, posterior, and simultaneous.

Order is five-fold. There is the order of time, of nature, of place, of dignity, and of knowledge. A man is before his son in time: The sun before its light in nature: The horses before the cart in place: A king before a duke in dignity: And a line must be known before an angle.

Things are said to be together in time, either which begin at the same time, as the sun and light, fire and heat; or which, in some part of their being, life, or time, are co-existent with each other; as Plato and Aristotle may be called contemporaries, though the master was much elder than the scholar.

CHAPTER XV.

OF MENTAL RELATIONS, VIZ. ABSTRACT NOTIONS, SIGNS, WORDS, TERMS OF ART, &c.

THUS we have finished all the real relations, and proceed to those that are mental.

Mental relations are such as belong not to beings as standing in any real relation to

each other, but they are made merely by our minds, and arise only from our manner of conceiving things, or from modes which our minds affix to them. They are known by this mark, *viz.* that if there were no intelligent beings to conceive of them, these mental relations could never have been.

The chief of this kind are pure abstracted notions, signs, words, terms of art, and external denominations.

Pure abstract notions are what the schools call second notions, second intentions, or in Latin *entia rationis, i. e.* mere creatures of the mind.

Yet it is not every sort or degree of abstraction that properly makes a mental relation: When we first abstract the idea of any special nature from its individual circumstances, *v. c.* the common idea of a man, or humanity, from the particular ideas that distinguish Peter and Paul, this is not a mere mental affection or relation, though it is an abstract idea, for it is part of the real and absolute idea of Peter or Paul, because all things contained in the general idea of a man have a real being in nature; though not really separate from some individual.

But when I abstract this common idea of humanity yet further in my mind, by considering it as a special nature or notion that agrees to several individuals, and under this precise consideration, I call it a species; this is a mental relation: Or, in like manner, when I call the abstract idea of animal a genus; these and the like are more properly termed pure abstracted notions, or, if I may use the word, they are second notions, because they are made by a second abstraction, and so they are at least one remove farther distant from real beings. The idea of predicaments, or predicables, in logick, are of the same kind; and I think we may rank the ideas of noun and verb, case and declension, in grammar, under the same class.

The general ideas of substance and mode, cause and effect, are abstract ideas also, though they are not abstracted to that degree, as to make mere mental relations, or second notions of them, since they have a reality and existence in things themselves.

It is granted, that some of these abstractions are necessary and useful in the sciences; yet logick and metaphysics, as they have been taught in the schools, have been too much over-run with these second notions, these more refined abstractions, which have exposed them to the contempt and ridicule of the more judicious and polite part of mankind.

A sign is another mental relation: It is that which, being apprehended, gives notice to the mind of something besides itself, and that is called the thing signified.

The schools generally make a sign to be something sensible; but I think there is no necessity for that; for ideas that arise within the mind are signs of outward real beings; and some thoughts may be so connected with other thoughts or actions of the man as to become signs of them. The memory of a sermon is a good sign of attention; and pity is a sign of benevolence.

1. Signs are either natural or instituted.

Smoke is a natural sign of fire. Instituted signs are either divine, as baptism is a sign of washing away sin; or human, as a white staff is a sign of an officer at court. Instituted signs are often called arbitrary.

2. Again, Signs are either mere tokens, or they are both tokens and images: Those are mere tokens which do not represent the thing signified, as a rainbow is a token the earth shall not be drowned again. Those are images, as well as tokens, which do more

or less represent the thing signified; such are pictures drawn to the life; such also are baptism and the Lord's-supper, in the christian religion.

3. Signs are distinguished into antecedent, as the gathering of thick clouds is a sign of rain; consequent, as a funeral is a sign of death; and concomitant, as shivering is the sign of an ague, and a high pulse, with a thirsty palate, and flesh very hot, are common indications of a fever.

4. That other distinction of prognostic, memorial and commonstrative signs, in many cases is pretty much akin to the former: A hiccup, with an intermitting pulse and limbs growing cold and stiff, are prognostics of death; a funeral ring is the memorial of a friend departed; and a tomb is the commonstrative sign of a person buried there.

5. Signs are appointed to put us in mind of our interest, to admonish us of our duty, to warn us of the danger of some evil, or to encourage our hope of some good.

Yet further, 6thly, Signs are either seals to signify and confirm what has been done, or pledges to denote and assure what is to be done; or indications and evidences of what is doing.

In the last place, Signs are sometimes necessary and certain, as the morning star foretels the approaching sun-rise with assurance; and sometimes contingent, or only probable, as a very dark sky in cold weather is a sign of snow coming, but it is a doubtful one.

Note 1. Though there are many cases wherein a sign is really, naturally, and necessarily connected with the thing signified, yet it acquires the proper character of a sign only by the work of the mind, which makes one thing to signify another; and therefore it is properly a mental relation.

Note 2. There are scarce any two things in the world so exceeding distant and different from each other, but they may become signs of each other, by a voluntary or an accidental association of their ideas in the mind. If a man should happen to see an eclipse of the sun in the water when he was fishing for salmon, he may perhaps never see a salmon, but he may think of an eclipse.

Among all the signs that are useful to men, the chief are words, which are the most universal signs of our thoughts or ideas: But these arise only from the appointment and agreement of men. See a larger account of this in Logick.

Though all words and names are signs found out by the mind of man, and stand to signify things by the mere agreement of men, yet those are more eminently mental relations which are called external denominations, that is, names given to things upon the account of some conception which the mind affixes to them, rather than for any thing that really belongs to them; as when we say, Germany lies on the right side of England, and Ireland on its left; this is a mere external or outward denomination drawn from our usual manner of inspecting a map with our face toward the north part of it: But if we look on it with our face to the south, Ireland will lie on the right, and Germany on the left.

Many terms of art, which are called technical words, are a sort of outward denominations which are used in various sciences to signify the manner of our conceptionof things. If I say a dog is a species of beasts, the word species may be called a logical term of art: Or when I say the name dog is a monosyllable, or it is made up of one vowel and two consonants, I think these are grammatical terms of art, and may be called mental relations. *Fa, sol, la, mi,* are the same in music.

Thus far the affections of being.

CHAPTER XVI.

THE CHIEF KINDS OR DIVISIONS OF BEING, AND FIRST OF SUBSTANCE AND MODE.

AFTER we have gone through the various affections of being, we come now to consider what several kinds of being there are: And it is certain they may be distinguished by the mind of man in very various ways, and cast into several kinds or species: But those which are most common in this science, and indeed most universal, are these three divisions of them. Beings are either substances or modes, finite or infinite, and natural, artificial, or moral.

The first and most general division of being is into substance and mode.

Every being is considered either as subsisting of itself, without the support of any creature, and then it is called substance, as an egg, a tree, air, water, a man, an angel; or it is considered as subsisting by virtue of some other being in which it is, or to which it belongs; and then it is called a mode, as length, motion, shape, colour, softness, wisdom, knowledge.

Note, When we speak of beings, we do more usually understand substances, because they seem to have a more considerable sort of nature and existence: But since many modes, properties, and qualities have also a real existence in nature, and sometimes have other modes and affections belonging to them, besides vast powers and influences in the universe, I think they cannot well be excluded from the comprehensive idea of being.

Those philosophers who are of this opinion, are called the realists; whereas the writers who allow only substances to have a real existence and deny qualities, properties, relations, or any sort of modes really to exist, because they do not subsist by themselves, these are called nominalists or nominals.

It is granted, indeed, that mere relative modes or relations of things one to another, such as likeness, order, place, &c. seem still to partake less of the nature of beings than such real modes, as motion, figure, and quantity do; yet many of these relations have a real foundation in nature, and a sort of reality in things as well as in our conceptions. *Query*, Must we take them out of all the ranks of being, when the word is taken in its very largest sense?

Though there have been fierce contentions on this subject between the nominals and realists, yet the controversy is not worthy of any warm debate: For while it may be allowed on both sides, that being does not in so full and strong a sense belong to modes, as it does to substances, the disputants may agree by saying, that self-subsisting beings have a substantial essence and existence, whereas the essence or existence of modes is but modal. Why should names provoke disputes, where our ideas agree?

All substances that we know are either material or intelligent, *i. e.* bodies or spirits. Man, indeed, is compounded of both of them; but as for space, which is neither body nor spirit, I take it to be a nonentity, or nothing real, but a mere idea of the mind, which we are wont to consider under the form of something long, broad, and deep, without solidity. Perhaps these positive conceptions arise by our abstracting some properties of matter from the rest, or only from a prejudice of sense and imagination, just as

we conceive of darkness, or a shadow to have the dimensions of length and breadth, and fancy it to have shape and motion too, though we know it is properly not-being, or a mere absence of light.

After substances, we come to consider modes of being, and these have also their various kinds into which they are distributed, *viz.* essential and accidental, primary and secondary, inherent and adherent, *i. e.* qualities and adjuncts, and many others. But in Logick they are treated of largely; and therefore I dismiss the reader to Logick, Part I. Chap. II. Sect. 3 and 4.

CHAPTER XVII.

OF FINITE AND INFINITE.

THE ideas of finite and infinite come next to be considered by us.

Finite beings are those which are limited or bounded in their natures, their parts, their quantity, their qualities, their powers and operations, or their duration. Infinite is that which is unlimited, and hath no bounds.

When substances are called finite or infinite, it is chiefly in respect of their quantity, or in respect of their powers. All substances are in this sense finite or infinite: But as there are some qualities or modes of being which are called infinite or finite, so there are some to which neither finite nor infinite can properly agree: We speak of knowledge, goodness, patience, length, breadth, &c. as finite or infinite: But there is no such thing as a finite or infinite blue, red, or green; no finite or infinite likeness between two drops of rain: There is no finite or infinite truth in a proposition, nor finite or infinite crookedness in a stick.

The universe of bodies is finite in its dimensions or quantity, as well as every single body. I have elsewhere shewn, that the supposed space beyond the world is probably nothing at all, and therefore not properly infinite or finite; though we often speak of the infinite void; *i. e.* emptiness or absence of being every where beyond the creation, unbounded by any real being: For as nihility may be called the limit of being, so being may be said to limit nihility.

The idea of finite belongs to created spirits as well as bodies: Not in regard of quantity, if they have no dimensions; but in regard of their qualities, their knowledge, and power, and goodness, and all their operations, for all these are confined to certain limits. Yet they are allowed to have an everlasting or unlimited duration, *i. e.* with regard to the future, or *à parte pòst*, though not with regard to the past, or *à parte antè*, as the schools speak; that is, though they may have no end, yet they had a beginning.

This unlimited duration of spirits has been called usually immortality or eviternity. And indeed this property doth really belong also to matter considered in general as well as to mind; for however variable and mortal the particular forms and compositions of bodies may be, yet as for body or matter itself, nothing can destroy or annihilate it but the God that created it.

We have little to do with the ideas of infinite, but in our conceptions of the everlasting duration of our natures, and in our contemplations of God, or of mathematical quantities.

How far the duration of our souls is infinite, has been expressed.

The infinity of God has been usually distinguished into the infinity of his essence, or his duration, or his attributes.

1. The infinity of his essence or presence is his immensity or omnipresence: How this is to be understood concerning his consciousness and power, or influence, rather than extension, see the chapter of Time and Place.

2. The infinity of his duration is his eternity, without beginning and without end, *à parte antè*, as well as *à parte pòst*. See the chapter of Duration.

3. The infinity of his attributes implies that his knowledge and his power have no bounds; or that his power, knowledge, holiness, wisdom, goodness, are infinite, &c. *i. e.* every way perfect in the most absolute sense.

When we consider an infinite under this idea of actual absolute perfection, it may be counted a positive idea; but if we consider it as without limit, it is negative: Yet some refine further, and make the word limit a negative term, because it denies progress or increase, and thus infinite becomes a sort of positive idea again.

Mr. Locke teaches us that our idea of infinite is not a complete idea, but rather an idea ever growing and receiving additions; and for the most part this is a just idea of it, for it is certain, that this is the way we come by this idea at first. Yet the idea of an actual positive infinite directly contradicts this growing idea, for it supposes all addition impossible. We are finite creatures, and we soon lose ourselves among infinites.

Indefinite is not a medium between finite and infinite, for they are two contradictory ideas; indefinite therefore only denotes our ignorance of the limits of a thing.

No actual infinite can consist of finite parts, for there is some proportion between the parts and a whole, but between finite and infinite there is no proportion.

Yet mathematicians oftentimes deal in infinites, both with regard to magnitude and number: And though there be not in nature any actual infinite quantity of either kind, for there is no magnitude, there is no number, which cannot receive addition, yet they form a sort of abstracted notion of infinite length, breadth, depth, of infinite extension and divisibility, and reason upon them.

There is also infinite disproportion when they treat of quantities and their infinitesimals, *i. e.* such as bear no finite proportion to the quantities whose infinitesimals they are.

Their infinite approximations may be justly ranked among the ever-growing ideas.

CHAPTER XVIII.

OF NATURAL, MORAL, AND ARTIFICIAL BEINGS AND IDEAS.

THE last distribution of beings which I shall take notice of, is into natural, moral, and artificial.

Natural beings are all those things that have a real and proper existence in the universe, and are considered as formed and ordained by God the Creator; such are bodies, spirits, men, beasts, trees, fruit, strength, countenance, sense, reason, fire, air, light, &c.

Though some of these are produced by others, as eggs by a hen, and fruit from a tree,

yet God is generally considered as the author of all natural beings; and indeed he is so either immediately by himself, or by the laws of nature, which he has ordained.

Artificial beings are made by the contrivance or operations of men, whether they are of a mere corporeal nature, such as houses, windows, pictures, statues, arms, garments, writing, music, and the various utensils of life; or whether they relate more to intellectual matters, as words, sciences, rules, arguments, propositions, verse, prose, &c.

Note, Though in some natural beings man is said to be the more immediate author or cause of them, such as a father of his son, &c. and in all artificial beings whatsoever, yet the power of man reaches only to what is modal in them: It is God alone can make substances, for that is most properly a creation.

Moral beings are those which belong to the behaviour, conduct, and government of intelligent creatures, or creatures endued with freedom of will, considered as lying under obligations to particular actions or abstinences: But these, considered as moral, are only modal; such are law, duty, virtue, vice, sin, righteousness, judgment, condemnation, reward, punishment.

As beings have been thus divided into natural, artificial, and moral, I think we might almost in the same manner run through all the sciences, and give new names to different beings, by calling them logical, mathematical, political, &c. applying these names to the subjects which these sciences treat of.

I confess, I should choose rather to call them different ideas, than different beings; and under this consideration we may say logical ideas are such as genus and species, definition and syllogism; mathematical ideas are length, breadth, a cube, a circle, multiplication, proportion, &c. Our ideas are called medicinal, when we discourse of sudorifics and boluses; and when we speak of kings, subjects, laws, rebellion, allegiance, treason, &c. these are political ideas; but God, holiness, christianity, repentance, gospel, and salvation, are theological, and of highest importance above all other kinds of ideas.

THE

RATIONAL FOUNDATION

OF

A CHRISTIAN CHURCH,

AND

THE TERMS OF CHRISTIAN COMMUNION.

TO WHICH ARE ADDED

THREE DISCOURSES,

VIZ.

DISCOURSE I. A PATTERN FOR A DISSENTING PREACHER.

DISCOURSE II. THE OFFICE OF DEACONS.

DISCOURSE III. INVITATIONS TO CHURCH-FELLOWSHIP.

THE

PREFACE.

THE principles on which christian churches are built, are so plain, so natural and easy, and so much the same with those which give rise to all the well-formed societies in the world, that one would think there should not be such matter of debate and controversy among Christians, upon these subjects, as we have unhappily found.

For, besides the reasonableness of the things that are required for this purpose, our blessed Saviour himself has given us so many promises in his word to favour this practice of holy fellowship, and to encourage our hope, as give abundant reason to our expectations of divine success. Has he not told us, "that where two or three are met together in his name, there he is, or will be in the midst of them?" *Matt.* xviii. 20. And when St. Peter made a glorious confession of his faith in Jesus the Son of God, the promised Saviour, *Upon this rock*, said he, *will I build my church, and the gates of hell shall not prevail against it.*

So that if there is found but such faithfulness, such christian virtues of meekness, patience, and forbearance, as may be justly expected among Christians, I would hope such settlements as these might continue without interruption. And I trust I have here represented these things so faithfully, so plainly and clearly, that no single person, in any part of his practice, will find his conscience imposed upon by any article or canon here mentioned; nor will any society find itself obliged to do any thing in receiving, continuing, or excluding any persons from their church, but what lies natural and easy before the minds of persons, who do but exercise the common reason by which they conduct themselves in the affairs of human life.

Nor is there any thing here asserted, which confines Christians to so exact an uniformity in their principles and practices, but by the exercise of their reason with a small degree of charity, they may make and allow such alterations as will assist and promote the general peace and edification of the churches, under the care and patronage of Jesus the great Shepherd.

And upon these foundations, if the grace of our Lord Jesus Christ, and his Spirit, which is promised to assist the christian church, does but continue among his ordinances, from time to time, we may hope to find a comfortable succession and increase of members added to the church, and built up in faith, love, and holiness, till our Lord Jesus Christ himself shall return to this world, and finish the great and important work of judgment.

I would only add further, with regard more especially to the questions relating to christian communion, that if any thing contained in them may be effectual, through the divine blessing, to set the terms of christian fellowship in a juster light, to secure the great and necessary principles of Christianity, to remove any causes of offence from among the churches, and to lead the several parties of Christians to more moderate and charitable sentiments concerning each other, I shall have abundant reason to rejoice in my attempt, and give glory to the God of truth and peace.

Stoke Newington, March 25, 1747.

THE

RATIONAL FOUNDATION, FORM, AND ORDER,

OF

A CHRISTIAN CHURCH,

CONFIRMED AND IMPROVED BY THE DIRECTIONS AND EXAMPLES OF THE NEW TESTAMENT.

SECTION I.

REASON AND REVELATION AGREE TO REQUIRE SOCIAL RELIGION.

I. MAN is an intellectual and sociable being, and he owes honour and worship to God his Creator, in his social as well as his single capacity: He owes also assistance to his fellow-creatures in the affairs of religion, as well as in those of the natural and civil life. Social religion is, therefore, the duty of every man, where he can meet with such fellow-worshippers, as to lay a foundation for amicable union in the same acts of worship, and for mutual help in religious concerns: And these three following reasons, among others, oblige him to it:

1. As he is bound to express to God in secret, and alone, what sense he has of the divine being, attributes, and government, so he is obliged to join with others, and publicly to declare to the world, what an awful and honourable apprehension he has of the same things: And this that he may do honour to God amongst men, or glorify his name amongst his fellow-creatures; which secret religion cannot do. This is the chief end with regard to God, for which man's very nature is made sociable, and for which he is constituted by providence in human society. This is the first spring, and the perpetual foundation of all social and public religion: For this end, social honours paid to God shall be everlasting. This is practised in the society of holy angels, those *sons of God*, who *sang together, and shouted for joy*, when the foundations of the earth were laid; and who met together at certain seasons, *to present themselves before* God; Job xxxviii. 7, and i. 6, and ii. 1. This is required in our world of sinful men; so it will be, doubtless, in the world of separate spirits, who are described as a *church* or *religious assembly*, Heb. xii. 13. And so in the world of the resurrection, when the high praises of God and the Lamb shall be for ever on their tongues.

2. Man, in his single capacity, is obliged to perform acts of secret religion to God, because, in that capacity, he wants many favours from God; such as health, safety, food, raiment, &c. He is always receiving some of these favours, and always waiting

for more. And so also, every man, in his social capacity, for the same reason, is under obligation to perform acts of public or social religion, *viz.* prayer for public mercies wanted, such as good governors, peace, plenty, civil and religious liberty, &c. praise for public mercies received, and a profession of his hope of blessings, which he expects at the hands of God. If there were no other reasons for social religion to be found, yet I think the obligation of it would stand firm upon these two pillars. But I add,

3. It is a necessary and most effectual means of maintaining religion in this our world. Several persons, with united zeal, counsel, and strength, can do much toward the encouragement and assistance of each other: The elder, and more knowing, may instruct the ignorant, and all may strengthen each others' hands in the things of God and godliness. They may defend each other against injuries, reproaches, and the shame of singularity, and join in all proper practices to keep a sense of divine things lively and warm at their own hearts, and to excite others to the same practices of piety and goodness. Thus social religion appears, with evidence, to be the duty of mankind.

II. There are but two ways whereby God teaches us religion; that is, by the light of nature, which he has planted in men, and the light of revelation, which, in various ways, and in different ages of the world, he has communicated to men. And accordingly, religion is distinguished into natural and revealed. By each of these methods of teaching, men may be instructed in social, as well as personal godliness, and learn to perform the several parts and duties of it, according to their different extent of instruction.

As revealed religion, in general, acknowledges natural religion for its foundation, so all the parts of social as well as personal religion, whether doctrine or duty, worship, or order, so far as they are revealed and prescribed in the word of God, are still founded on principles of natural light and reason. Whatsoever, therefore, revelation has added, is but some positive or supernatural structure upon that foundation, without the opposition or contrariety to any parts thereof; for it is God himself that teaches us by the light of nature and reason, and we never can suppose that, by revelation, he will give us instructions which are contrary to the very principles of reason, and to those fundamental lessons of religion which he has written in our natures.

Human reason is the first ground and spring of all human religion. Man is obliged to religion because he is a reasonable creature. Reason directs and obliges us not only to search out and practise the will of God, as far as natural conscience will lead us, but also to examine, receive and obey, all the revelations which come from God, where we are placed within the reach of their proper evidences. Wherein soever revelation gives us plain and certain rules for our conduct, reason itself obliges us to submit and follow them. Where the rules of duty are more obscure, we are to use our reason to find them out, as far as we can, by comparing one part of revelation with another, and making just and reasonable inferences from the various circumstances and connections of things. In those parts or circumstances of religion where revelation is silent, there we are called to betake ourselves to reason again, as our best guide and conductor. And let it be observed, that there are many instances also, wherein we are instructed to pay the same honours to God, and fulfil the same duties to men, in the practice of public as well as private religion, both by the light of reason and the light of revelation: For God, who knows the weakness of our intellectual powers, has been graciously pleased to give us a shorter, plainer, and easier discovery of many rational and moral truths and duties

by revelation, which would have been very tedious and tiresome, as well as much more difficult, for the bulk of mankind to have ever found out and ascertained by their own reasonings.

III. When we have received upon just evidence the New Testament, as a revelation sent us from heaven, then our own reason and conscience oblige us to search in these writings, what new doctrines God has there proposed to our faith, and what new duties to our practice. And here, in our search after the things that relate to our personal religion, we shall find several sublime and glorious truths to be believed concerning the blessed Trinity, the Father, the Son, and the Holy Spirit; and almost all the œconomy of our salvation revealed to us, above and beyond what the light of reason can ever discover, or so much as surmise. We shall here find also the duties of faith, in the name, and blood, and righteousness, of the Son of God, for the pardon of our sins, and the justification of our persons; hope in his resurrection; subjection to his government; offering up our addresses of prayer and thanksgiving to God the Father, in his name; seeking the influences of the blessed Spirit, to sanctify our souls; waiting for the return of Christ from heaven, and for our own resurrection to eternal life. All these, I say, we shall find revealed and prescribed, over and above the duties discovered by reason. And besides these, we have the institution of the two sacraments, to be ever celebrated by Christians, as memorials and pledges of some of those duties and blessings.

And it is not at all to be wondered at, that the gospel should require of us the additional belief and practice of such doctrines and duties in our personal religion, as the light of nature knows nothing of; because the very design of the gospel was to restore sinful man to the favour and likeness of God, which the light of nature, or the law of natural religion, could not do: The nations of the earth, and the men of the brightest reason among them, in long successions of ages, had made sufficient experiments of the practical insufficiency of human reason for that divine purpose.

But when we come to inquire what rules Christ has laid down for our conduct in social religion, distinct from these evangelical doctrines and personal duties, here we shall find far the greatest number of the same things which are prescribed to us by the holy Scripture, or at least represented as the practices of the apostles and primitive Christians, to be also prescribed by the light of nature; we shall find them to be such practices, or rules of conduct, as upon the supposed revelation of the christian doctrine and sacraments, human reason and prudence would, for the most part, lead us to perform.

And we may take notice by the way, that the chief peculiarities of the gospel in faith and practice, so far as relates to our personal religion, are much more plainly and expressly dictated to us in Scripture, by way of direct and explicit revelation and command; whereas the affairs that relate only to social religion, excepting the sacraments, are, for the most part, hinted to us in a way of narrative, and are to be drawn out by inferences; wherein much more is left to the exercises of our own reasoning powers, than in the matters of personal faith and practice.

IV. I would ask leave to observe here, that it is a fashionable and modish thing, now-a-days, to represent the whole religion of Christ, whether personal or social, as little more than the mere religion of nature, revised and reformed from the corruptions of the

sinful and degenerate nations, both jewish and gentile; which opinion I can never assent to, so far as it regards the peculiar evangelical and glorious truths and duties, which relate more immediately to our personal religion, to our salvation and eternal life in the world to come: Yet, in matters that relate to the constitution and government of christian churches, whose chief design is to hold forth and maintain our religion publicly and visibly in this world, I am not afraid to say, there is a most happy correspondency and similarity between the dictates of the light of nature, and the prescriptions of the New Testament, almost all the way.

In this affair revelation does not add a great deal of new duty beyond what reason would teach us, as very proper to maintain natural religion in the public profession of it. This will sufficiently appear in the following particulars.

SECTION II.

INSTANCES OF THE AGREEMENT OF REASON AND REVELATION IN SOCIAL RELIGION.

I. Wheresoever public and social religion is to be maintained, the light of reason teaches us, that several persons, who profess the same religion, must sometimes meet together to celebrate the solemnities, rites, and ordinances thereof, and to worship God according to the rules of it. When this religion is professed by great multitudes, or by whole nations, it is not possible they should all be convened together in one place, so as to join frequently in the same acts of worship, to offer their united prayers or praises to God, in a regular and rational manner, and with conveniency and edification to such a vast assembly. In such a case, therefore, it is necessary, that they should be separated into distinct societies, for the same purpose.

And does not the New Testament sufficiently indicate these things to us, as relating to the social religion of Christians? Do we not find them frequently met together, in the history of the *Acts* of the Apostles, *that with one mind and one mouth they may glorify God, even the Father of our Lord Jesus Christ;* as in *Rom.* xv. 6. Are not such assemblies continually mentioned and encouraged in the Epistles? And are not Christians exhorted to maintain this custom, and "not to forsake the assembling of themselves together," *Heb.* x. 25. Do we not find the christian converts of the same country divided into particular congregations, which are called churches, who meet together for this purpose; the church at Corinth; the church at Philippi; *the churches of Galatia;* 1 Cor. xvi. 1. *The seven churches of Asia;* Rev. i. 11. *All the churches of the saints;* 1 Cor. xiv. 33.

II. The light of nature and reason teaches, that where persons join together for any religious service, they must be agreed in the main and most important points that relate to it. *How can two walk together, except they be agreed?* Amos iii. 3. For otherwise perpetual jarring and confusion of opinions and practices would arise in the very worship itself, which would destroy all the delight, the harmony, and decency of it. A worshipper of the true God cannot join in natural religion with a worshipper of idols.

And yet it is not every little difference in sentiment and opinion about the true God, or his worship, that is sufficient to exclude persons from the same religious society, where their agreement is so great, as that the chief ends of public worship may be happily maintained. Therefore Abraham and Melchisedec might join in the same

worship of the one true God, though Abraham was taken into a peculiar covenant with special promises, and Melchisedec practised religion upon the ancient principle and dispensation of his father Noah. *Gen.* xiv. 18, 19, 20, 22. So Abraham worshipped God with Abimelech, the king of the Philistines, upon the same general principle, and they made a covenant, and sware together by the true God; *Gen.* xxi. 22—31.

And does not the New Testament teach us the same practice, *viz.* that where persons would be united in christian worship and religious society, they must agree in their religion, so far at least as to make a credible profession of their being the sincere disciples of Christ, and must make known their agreement in all the necessary principles of Christianity.* They must profess not only the one true God, but faith in Jesus Christ the Lord, in his most important characters and offices, together with such repentance of sin, and such a visible practice of holiness, as may give reason to hope their profession is sincere. In the primitive times they "confessed their faith," and then "shewed their works;" *Acts* xix. 18; and thereby proved their profession to be sincere, and their faith to be a "true or living faith;" *James* ii. 17, 18. It was commanded that the Jews should bring forth *fruits meet for repentance*, in order to be admitted to John's baptism; *Matt.* iii. 8. And surely then it must be required to the baptism of Christianity, or an union with the disciples of Christ.† They are generally described to be such as worship God, through Jesus Christ our Lord, and profess that faith which worketh by love; which is the substance of Christianity in a very few words.

And though there are, and will be, some lesser differences in sentiment among Christians in all ages, and though they are as great as were between the jewish and the gentile converts in primitive times; yet the New Testament teaches, that they may all unite in the same christian society, and "receive one another in the Lord;" that is, to all the privileges of fellow-christians, and the fellowship of gospel-ordinances, even upon as large a foot "as Christ has received them;" *Rom.* xiv. 3, and xv. 7. Whether they are strong or weak in the faith, they are to be thus received, without entangling their minds with "more doubtful and disputable things;" *Rom.* xiv. 1; that is, whether they eat herbs or flesh, or believe "some days were holy, or every day alike;" *verses* 3, 5.

III. Again, The light of reason teacheth, that there must be a mutual consent, compact, or agreement, amongst such persons as profess the same religion, to walk according to the directions and dictates of it, and to assist and encourage, to join and support one another in the profession and practice of it, as well as to meet and worship together at certain seasons and a certain place. This engagement for mutual assistance is very necessary, for the support of any religion in the world; and without such an agreement as to time and place, a company of men cannot meet for any purpose what soever, either in things civil or religious.‡

* Here it is not proper to divert so far from my subject, as to enter into a debate how many of the christian doctrines are of absolute necessity to make a disciple of Christ, or a true Christian: This is an endless controversy, according to the different opinions of men.

† Let it be observed, that in this, and other parts of my discourse, I speak only of adult persons, who are capable of professing their faith; being not willing to embarrass this discourse with the controversy relating to infants, their discipleship, or their baptism.

‡ Where the magistrate takes upon him, whether with or without order from heaven, to appoint all the forms, times, and places of worship, and the people willingly consent to it, and obey the magistrate herein, this is an implicit agreement among themselves, and attains the same end, in some measure, though it may happen to infringe christian liberty.

If there be any precise time, and any particular place, appointed for this purpose by divine revelation, reason immediately determines that we must meet at that time and that place: But where there is not any such divine direction, there the place and time must be concerted and agreed by those who are united in such a society; nor has any one person power to impose his will or humour upon the rest. The acts of religion must be all free and voluntary.

Now what saith the New Testament in this case? The union, or mutual agreement among particular Christians for this purpose, which is the bond of their society, is expressed by St. Paul, or, at least, it is included in that phrase "of receiving one another, as Christ has received us," *Rom.* xv. 7, "that with one mouth we may glorify God." It is a mutual receiving one another "in the Lord;" *Rom.* xvi. 2. The word is used to the same purpose, *Rom.* xiv. 1, and in other scriptures. If this agreement be not expressed so plainly in Scripture as some persons might expect, it is because the very nature of things, and the reason of man, makes this mutual consent and agreement so necessary to keep up any public religion, that it was not needful for the Scriptures to be more express or particular in the appointment of it.

As for the place of worship, there is none made sacred, or divinely appointed, under the New Testament; John iv. 21—24, *Neither in this mountain*, Gerizim, *nor at Jerusalem, shall they worship the Father; but the hour cometh, and now is* at hand, *when* without regard to any particular place, they shall be accounted *true worshippers*, who *worship God in spirit and in truth*. And therefore some convenient place must be agreed upon by the society, since the New Testament determines none.

As to the time, it is confessed that we Christians have not so express and particular prescriptions of the seasons of worship as the Jews enjoyed, neither as to their weekly sabbath, or any other of their festivals: But there is sufficient evidence from sacred history, that *the first day of the week* was the usual season of public christian worship in the apostles' times and in the following ages; and the day was known among Christians by the honourable title of *the Lord's-day*, so far, that the observation of it was the characteristic, or distinguishing mark of a Christian. Now since it was so early and so universally practised by the professors of Christianity, we have just reason to think it was appointed by the inspired apostles, that Christians should come together to worship God on that day, and give honour to their risen Saviour. *Acts* ii. 1—4, 41; xx. 7; 1 *Cor.* xvi. 1, 2; *Rev.* i. 10. And that they should agree to come to worship at the same time and the same place, is evident from 1 *Cor.* xi. 20, 33, and xiv. 23: "The whole church were to be gathered together at one place, otherwise, they were to tarry for one another," till the chief part of them were come.

IV. Since mankind is mortal, and every human assembly will die away by degrees, unless it be supplied with new members, common reason directs every religious society to receive in new members, upon their appearance to be properly qualified, according to the rules of that religion, and the judgment of that society; that there may be a continuance of this religion in the world.

And in the same manner the light of nature, or reason, and common prudence, teach us also, that if the persons who have thus professed any particular religion, do either renounce it in principle or profession, or maintain, in a public and notorious manner, such a set of notions, or such a course of conversation, or of worship, as is inconsistent with it, this religious society will think it proper to cast such persons out of their fellow-

ship, that they may not infect the rest, nor dishonour their religion: *For what fellowship has light with darkness*, a man of vice with the sons of virtue, a Turk with a Jew, or a Pagan with a Christian?

And does not the New Testament represent to us the christian churches receiving new members on their profession of Christianity? Acts ii. 41, 47, *They who gladly received the word were baptized; and the same day there were added to them about three thousand souls: And the Lord added to the church daily such as should be saved.* And does not the apostle teach the churches to take care that they be kept pure, and free from scandal, by separating themselves from evil members, and by casting out those that depart from the truth, or are guilty of gross immoralities? 2 Thess. iii. 6, *Withdraw yourselves from every brother that walketh disorderly;* 1 Cor. v. 4, 5, 11, 13, *When ye are gathered together, deliver such a one to Satan.** *Purge out the old leaven, that ye may be a new lump;* that is, put away from among yourselves that wicked person. *If a man that is called a brother be a fornicator, or an idolater, or a railer, or a drunkard, or an extortioner, keep no company with such a one; no, not to eat.* And those who deny the resurrection, *and overthrow the faith of some*, are *delivered to Satan*, and cast out of the church into the world, which is his kingdom, *that they may learn not to blaspheme;* 1 Tim. i. 19, 20, and 2 Tim. ii. 17, 18.

Reason and Christianity also join to inform us, that, upon the credible evidence of a sincere repentance, and a change of heart and life, such offender should be forgiven, and received into the religions society again: So the offending Corinthian was forgiven, and received and restored again to the love and communion of the christian church there. See 2 *Cor.* ii. 7—9.

V. It is evident to common reason, when such a voluntary religious society is instituted, the right of receiving or casting out members, or restoring them upon repentance, lies originally in the society itself, because the society itself is formed, and subsists, by the mutual compact of its own members; and whatsoever qualifications are required of persons, in order to become members of this body, it is the society itself that has an original right to judge whether the persons have these qualifications or no. It was upon the mutual acknowledgement of such qualifications, expressed or implied, that this society was first founded; and as a voluntary society, it must be maintained on the same foot, otherwise new members will be likely to be admitted, and imposed upon them, to the great dislike and injury of the society.

Indeed, they may depute several particular persons of their number, whom they suppose better skilled therein, as elder and wiser, to act for the whole society, and particularly to examine into the qualifications of persons, and the merits of the cause, when members are to be received, or to be cast out; but they should never renounce their own original right. They may also appoint any particular person to go before the rest in this matter, to give them his advice herein, to acquaint them what persons are fit to be received, and to pronounce the sentence of receiving them into the society, or excluding them from it, according to the evidence of their qualifications: And this, I presume, will

* Whether the delivering an offender to Satan, in the primitive times, did include in it the infliction of any sore bodily disease, though it be probable, yet it is not certain, nor universally agreed; but I think it is agreed pretty universally, that such a one was cast out of the church, and delivered back again into the world, which is the kingdom of Satan; who is called in the Scripture *the prince and the god of this world;* John i. 4; 2 Cor. iv. 4.

be usually allowed to be the office of the fixed pastor, or president of the assembly, where there is such a president.

And does not the New Testament generally give directions agreeably to this dictate of the light of nature? Does not St. Paul direct to the churches themselves his apostolic advices about receiving, casting out, or restoring members? See his advice to the church at Rome; *Rom.* i. 7, and xiv. 1, "Ye saints at Rome, receive him that is weak in faith;" Rom. xv. 7, *Receive ye one another;* Rom. xvi. 2, *Receive ye* Phebe *in the Lord as becometh saints.** See his advice to the Corinthians, 1 Cor. v. 4, 5, *In the name of our Lord Jesus Christ, when ye are gathered together, deliver such* a wicked man *to Satan;* verse 13, *Put away from among yourselves that wicked person.* And in 2 Cor. ii. 6, this is called *a punishment inflicted by many.* And verses 7, 8, 10, the church was taught and required to forgive him upon his evident repentance, *to confirm* their *love towards him,* to the fellowship of the church.

It is granted, indeed, when proper officers are chosen and fixed among them, it is by their ministrations, by their advice and direction, christian churches should usually exercise this discipline; and so the orders of Christ are directed to the angels of the churches, *Rev.* chapters ii. and iii. But the whole work of reformation and discipline there required, is such as eminently concerns the churches or people themselves, and not the pastors only.

It is also granted, that many times churches do commit the whole care of this matter into the hand of their ministers, as being usually fittest to judge of the profession made; but it ought never to be so entirely given into their hands, as to renounce the people's right of judging in these affairs. *Diotrephes, who loved to have the pre-eminence among them,* assumed to himself the right of receiving and casting out members from the church; but he was severely reproved for his pride and usurpation, when he forbid his fellow Christians to receive brethren who were worthy; 3 *John* 9, 10. Ministers may happen to prove so injudicious, or so negligent of inquiry into the profession and qualifications of persons to be admitted, so subject to prejudices, or so engaged in a party-quarrel, as to fill the church with such members as may be very contrary to the sentiments of the majority of the church; and if the people renounce their own right in this affair, they may thank themselves for such unhappy consequences.

I would add also, that if people entirely give up the right of admission and exclusion to the minister alone, they can never cast the minister himself out, if he be never so impious and immoral.

Having found the constitution of a christian church to be so conformable to the dictates of right reason, let us consider what are the acts of worship which are to be paid to God in public, and in what manner must they be performed; and we shall find the light of reason and the New Testament happily agreeing here also.

VI. The several acts of worship, which the light of nature directs us to pay to the great God, are such as these: To adore him with all humility, on the account of his glorious perfections, and his wonderful works of power and wisdom; to join together in prayer to God for such blessings as we stand in need of; to confess our sins, and ask the forgive-

* It is granted this text refers to Phebe, as a traveller at Rome, and desiring to hold occasional communion with the christian church there; but the reason of things is the same, or stronger, with regard to receiving persons into a fixed and constant communion with any church: There must be still a mutual agreement.

ness of them; to acknowledge his mercies, and give thanks to his goodness; and to sing with the voice to his honour and praise. The light of nature directs us also to seek continually a further acquaintance with the nature and will of that God whom we worship, in order to practise our duty the better, and please our Creator; and to provide some way for the further instruction of those who are ignorant of that religion, and come into their assemblies to be instructed; and for the exhortation of the people to fulfil their duty to God and their neighbours. And if there are any special rites or ceremonies, such as belong to social worship, the light of nature tells us, that here they ought to be performed.

And does not the New Testament set all these matters before us so plainly and frequently, with regard to Christianity, that I need not stand to cite chapter and verse, where these things were practised by the apostles and the primitive Christians, in their assemblies? Here adorations, prayers, and thanksgivings, are offered up to God, but in the name of Jesus, as their only Mediator: Here their addresses are made to God with one mind, and with one mouth, to the glory of God, who is the God and Father of our Lord Jesus Christ: Here psalms, and hymns, and spiritual songs, are sung to the honour of the Creator and Redeemer: Here the word of God is preached for the instruction of the ignorant or unbelievers, who come into the christian assemblies, that sinners or infidels may be converted, and Christians edified, and exhorted to persist in the faith, and improve in holiness; 1 *Cor.* xiv. 23. Here the great ordinance of christian communion, the Lord's-Supper, is celebrated, by distributing and receiving bread and wine, and eating and drinking in remembrance of their common Saviour and of his death; 1 *Cor.* xi. 20—26. As for the other ordinance, *viz.* baptism, it being not so properly an act of public or social religion, I do not find it is any where required to be done in public; and though it might be rendered more extensively useful by that means for some purposes, yet it may be performed in private houses, or in retired places, as it sometimes was in the primitive ages.

VII. Since there ought to be such public ministrations performed as I have described, our own reason and observation of mankind sufficiently inform us, that all persons are not capable of leading these public religious services, *viz.* they are not all fit to speak usefully in the name of men to God, in prayer or praise, or to teach the things of God to others, in a profitable and becoming manner, nor with decency and exactness to celebrate all the rites and ceremonies of any religion. Reason itself therefore directs us that there should be one or more persons chosen in every religious assembly, who should be wise and prudent, grave, sober, and faithful, and better skilled in the things of religion than others; and who should be capable in a more clear and happy manner to express them, that he, or they, may go before the congregation, and lead them in their several acts of worship; that they may give instruction to the rest, and with their lips offer up their common addresses to God, and celebrate the sacred rites of their religion.

For this purpose reason teaches us, that if a person so qualified be not found in any particular religious society, they ought to seek one elsewhere. And persons who have superior skill in this religion, should train up others, from time to time, in the articles of their religion, that they may be able to instruct the people, and become more capable of this public service.

If it be inquired, what the light of reason directs about the investiture of such a person in this office? I know of nothing more, but that the people should make all due inquiry

concerning his qualifications; that they should ask the opinion or advice of other teachers, who are better skilled in this religion than themselves, where it can be conveniently obtained; and when they themselves also have had sufficient experience of his abilities, and knowledge of his virtues, they should agree to choose him into this office; and that he himself solemnly should accept of it; and devote, or give up himself to it; and that he should be with great solemnity recommended, by public prayers, to the blessing of God, in the discharge of it. This is all the investiture that reason seems to require.* And this man, thus set apart to the sacred work, should continually endeavour to improve his qualifications, and render his religious services more and more useful to the people, and take due care, as a faithful overseer, that the people maintain the practice of the religion they profess.

Reason itself also teaches us, that if there be any persons in the assembly who give sufficient evidence of their being inspired, or taught of God, and of having any divine commission to instruct the people; these persons ought eminently to be received as teachers, and employed in such religious service.

Let us now see what the New Testament, or the rule of Christianity, directs in this point.

This is sufficiently evident, that Scripture has appointed such a set of men, or such officers in the christian church, as may lead divine worship in their assemblies, and may celebrate the institutions of the gospel among them. We find their names and titles frequently mentioned, as pastors, teachers, elders, bishops, shepherds, &c. We find the duties of their station often spoken of, the characters and qualification of the persons described, their support provided for, and the people's duty to them enjoined. And since the church is to continue to the end of the world, or till Christ comes again from heaven, it is plain there must be always such persons to minister in holy things in every age.

In the very primitive times there was a great variety of talents and capacities, for the ministrations of christian worship, conferred by inspiration upon those who embraced the religion of Christ: These were taught of God in a more immediate manner:† And where these extraordinary gifts were numerous, either they needed no other preachers, teachers, or ministers, always supposing some wise person amongst them to be a προεστὼς, a president, or chairman, who, by natural rules of prudence and order, should keep their various performances within the limits of decency and edification; or, at least, they were not yet furnished with particular officers, being then but in an imperfect state as to regular order. Such was the Corinthian church: And where any apostle or evangelist was present, he is reasonably supposed to preside; or, in his absence, he sometimes gives direction for their conduct, as though he were present; 1 *Cor.* v. 3, 4.

But in other churches, where these gifts were but few, the chief possessors of them, and especially the early and more experienced converts, were chosen out to be elders, or

* According to the light of nature and reason, no man should be made a teacher, or president, or leader in any voluntary religious society, but by the consent and agreement of that society, to put themselves under his instructions and care. No civil powers have authority, by the law of nature, in these matters of religion and conscience; nor can any man be made an officer in any society, without his own free consent: And as all religious affairs regard either the honour of God or converse with him, so an address to God for a blessing, is a natural and reasonable solemnity, that should attend the entrance into a religious office.

† These gifts were so much distributed in that day among the Christians at Jerusalem, that even the deacons, who were appointed to take care of the poor, had such extraordinary gifts, and exercised them now and then in teaching the people as evangelists. See *Acts* vi. 2, 3.

guides, and leaders of their worship, pastors, or teachers, according to their peculiar talents of exhortation, or of instruction: And they were sometimes called overseers, that is, bishops, having an oversight of the people and their behaviour; being reasonably supposed to know more of the will of Christ than the common people, and to be more solicitous for the honour of Christianity, and for its preservation.

It is probable that sometimes these elders, or overseers, which words are used promiscuously in several places of the New Testament,* might be pointed out by the direction of a spirit of prophecy, or by the gift of discernment of spirits, by the apostles, or other inspired men, in that day, as Timothy was pointed out by prophecy, to be an evangelist; 1 *Tim.* i. 18, and iv. 14. And in this sense the apostles and evangelists, Paul and Barnabas, Timothy and Titus, might perhaps, by the direction of the Holy Spirit, nominate the persons fit to be ordained elders in the churches, and, upon the consent of the churches, might ordain or appoint them for that purpose; *Acts* xiv. 23. 1 *Tim.* v. 22. *Tit.* i. 5. And perhaps this is the reason why it is said of the elders of Ephesus, that the Holy Ghost had made them overseers; *Acts* xx. 17, 28. But it is hardly to be supposed that any persons were made rulers, teachers, or overseers of any church of serious Christians, without the consent of the society, who were to be taught and governed by them in matters relating to their eternal interests.

Even when an apostle was to be chosen in the room of Judas, the hundred and twenty disciples, of whom eleven were apostles, joined in the choice of two persons, out of which the lot determined one to be an apostle; *Acts* i. 15, 23. Deacons, who manage the secular affairs of the church, were chosen by the people; *Acts* vi. 3. And still more reasonable it is, that elders, or bishops, who have the care of their souls, should be chosen by them who want and desire their instructions in such important concerns.

In following ages, when these extraordinary gifts ceased in the churches, it is more evident from the histories of those times, that their overseers, or bishops, were chosen by the people. And the characters of them are given us at large, and very particularly, in two places of scripture: 1 *Tim.* iii. 1—13, and *Tit.* i. 5, 6. And certainly this is left upon record, that we might be directed in such a choice to the end of the world, as well as to give directions to Timothy and Titus in the performance of their extraordinary office at this time.

As for the investiture of men with this office, the New Testament gives us some notices that they were set apart by solemn prayer and fasting, and generally with *laying on of* the *hands* of the persons who were inspired, or possessed of some superior character. Whether this rite were designed to communicate any new gifts, or to pronounce an inspired and effectual blessing on their ministrations; or whether it was only retained in the christian church as it had been an ancient rite, used almost from the earliest ages of mankind, on several occasions, particularly in the solemn benediction of a person, or in the prayer for a blessing on him, or appointment of him to any special service, I am not

* It may not be improper in this place to point out the chief scriptures where these characters are used promiscuously, and seem to denote one and the same office. Acts xx. 17, *From Miletus*, Paul *sent to Ephesus, and called the elders of the church.* But in verse 28, St. Paul calls these very persons *overseers*, επισκοπες, bishops. Tit. i. 5, *Ordain elders in every city;* verse 6, if *any be blameless;* for in verse 7, *a bishop must be blameless.* 1 Pet. v. 1. 2, *The elders which are among you, I exhort, who am also an elder; feed the flock of God, taking the oversight thereof,* the bishoprie thereof, επισκοπην. But our English translators have generally taken care to keep the word "bishop" for the most part out of sight, where it is applied to presbyters, or elders, in the Greek.

able to determine:* This is certain, that the rite of imposition of hands has something natural in it, when we pray for a blessing to descend on any particular person, and more especially at his entrance into an office; as it were to point him out in a visible manner to God and the world. Good old Jacob laid his hands on Ephraim and Manasseh, when he blessed them; *Gen.* xlviii. 14—18. And in *Deut.* xxxiv. 9, Moses laid his hands on Joshua, as his successor. The children of Israel also laid their hands on the Levites, at their dedication to the service of the tabernacle; *Numb.* viii. 10. But as there are different opinions on this subject, I dismiss it, without any other determination than this, that it seems to be a sort of natural ceremony, an innocent and ancient rite at such seasons; though I do not see sufficient proof of the certain necessity of it; even as lifting up the hands to heaven, in prayer for a blessing on one's self, is a sort of natural rite or gesture, used by Jews and heathens, and not necessary to be used in every solitary or personal prayer. The laying on the hands on another person, when we are praying for a blessing on him, seems to be of the same kind, *viz.* a sort of natural rite or gesture, much used in the Old Testament and the New; and though it is not plainly made necessary on every such occasion, yet it must still be acknowledged it was often, if not always, used in the primitive and inspired times, when either gifts or offices were conferred by some particular persons upon others.

And it certainly adds a sort of solemnity to the work; and it has so much of countenance from Scripture, that I think it cannot be called a mere human and arbitrary invention of men.

This is certain, that such persons were to be trained up in a succession for this service in the churches. Timothy was required to *commit to faithful men the things that he had heard and learned of St. Paul, that they might be able to teach others also;* 2 *Tim.* ii. 2. And these persons were to *give up themselves continually to the word and prayer,* as the apostles did; *Acts* vi. 4; and to excite and stir up their talents for instruction and edification, to *give attendance to reading, to exhortation, and give themselves wholly to them, that their profiting might appear to all.* For if this be required of so extraordinary a person as Timothy, 1 *Tim.* iv. 13—16, much more reasonably is it required of those who have no extraordinary gifts.

I might further add, that these teachers and ministers of the gospel are required in the New Testament to be faithful, diligent, and zealous in the work of Christ, willingly taking the care, or oversight, of the religious concerns of the people, in instructing and overseeing the flock, and watching over them for their spiritual good, as well as going before them in all acts of holiness, and being *examples* to all other Christians *in word, in conversation, in faith, in charity, and in purity* from all sin; *verse* 12.

* Timothy, a young evangelist, had the hands of the elders, that is, the presbytery, laid upon him, 1 *Tim.* iv. 14. And perhaps, at the same time, he was blessed by the hands of St. Paul with extraordinary gifts; 2 *Tim.* i. 6. And he himself, an evangelist, was ordered to *lay hands suddenly on no man;* 1 Tim. v. 22. It is a question indeed whether Timothy, or the presbytery, could confer any extraordinary gifts or blessings; it is more probable, for many reasons, that this belonged only to the apostles; and then this their imposition of hands could not be designed for the conferring of extraordinary gifts; but still it might be used to pronounce a prophetical blessing on the preacher, which no uninspired person could do; or, finally, it might be the ordinary form of benediction, or of institution to an office.

SECTION III.

A BRIEF INQUIRY HOW FAR THE MODES OF THE MISSION, OR ORDINATION, OF PRIMITIVE MINISTERS ARE OUR RULE NOW.

UPON this short survey of things, under this head, give me leave first to make one observation, and then consider the inquiry proposed.

The observation is this: Various were the affairs and regulations of the primitive churches, relating to their several officers, whether apostles, evangelists, bishops, pastors, teachers, prophets, elders, &c. and in the nomination of those officers, whether by Jesus Christ himself, by prayer and lot, by inspiration of the Spirit, by prophecy, by gifts of discerning spirits, or by the choice of the people, &c. And in their ordination, or mission, by fasting, and by imposition of hands, as well as prayer: And whether this were performed by the apostles, prophets, presbyters, or elders, or evangelists, &c. Now all these things, at that time, were so much directed, governed, influenced, determined, and transacted by extraordinary gifts, and the inspired persons who possessed them, that I cannot find, in the New Testament, any one instance of the choice and mission, appointment or investiture, of any ordinary officer, or officers, who were not of the extraordinary kind; and therefore these things cannot, in every point, be rules or patterns for all following times.

If any one here object, that if we suppose the formation, ordination, and mission of ministers, to be so described in the *Acts of the Apostles*, as not to give following ages an exact rule or pattern for their ordinary practice; why may we not also suppose some of the doctrines and duties of personal Christianity, described in the gospel, to belong only to extraordinary times?

The answer is easy, *viz.* That mankind are to be saved through all ages of Christianity in the same way, by the same gospel, the same doctrines and duties. But the preachers of this gospel may not be furnished nor ordained the same way, when extraordinary commissions, extraordinary gifts, and powers, are ceased: For it is apparent, that these extraordinary preachers and governors of the church, mingled the exercise of their extraordinary powers with some of their ordinary ministrations.

Hence it comes to pass, that it is so difficult a question, and so exceeding hard to affirm with exactness and certainty, how many of these officers, and of these solemn rites and actions, were designed by Christ to be continued in the following ordinary occasions of these churches, when extraordinary gifts should cease; and how many of these forms are to be practised in all succeeding ages. Most of the learned and inquisitive men who have written since, have greatly differed in their opinions of this matter, and left many things therein difficult, or dubious, after all their laborious comments.

Let us inquire then, what there is of all these things, that is certain and necessary in our age, and is not subject to this occasion of doubting which I have mentioned?

1. This seems certain by the light of nature and reason, that christian assemblies, as well as any others, in ordinary as well as extraordinary times, should have a teacher to instruct the ignorant in knowledge, and make known to the church the mind and will of God in his word: They should have an exhorter, to stir up the people to the practice of their duty; a man of prayer, to address God in their public devotions; an

overseer, or bishop, to take charge of the flock, to inspect the manners of the people, and watch for the good of their souls; a president, to be chairman in their assemblies, to keep up order there; and a grave and skilful person fit to administer the rites and seals of the christian religion. Now all these characters, capacities, and talents, are often contained in one single person, who may be sufficient for a small church; or, perhaps, in two or three persons, for the supply of larger churches.

2. I think we may take it also for a certainty, that where God doth not interpose to point out the teachers, or overseers, in any christian church, by inspiration, there is no person or persons, either in the church or state, who have any rightful power, derived either from reason or Scripture, to impose a teacher, or overseer, on any assembly of Christians whatsoever, without their own consent; for it is they themselves must give an account for their own souls to God; and therefore, they must have a right to choose who shall teach and lead them in matters of religion. Conscience is too sacred a thing to be imposed upon by fallible men, and the soul is too valuable to have its concerns entrusted with any persons, without our own agreement.

And though the choice or consent of the churches may not be so particularly mentioned in Scripture, when elders or bishops were ordained among them by persons who were inspired, yet reason itself supposes it; and their extraordinary gifts from the Holy Spirit, proved and required the duty of submission and consent in the people, even if they had not a hand in the first choosing of them. The great God could do them no wrong by appointing elders, or bishops, for them, in an immediate way, or by inspiration.

But when extraordinary gifts ceased, we find many testimonies in the early writers, to the consent of the people in the choice of their church officers. The Scripture itself makes it evident, that deacons were chosen by the people in primitive times. Acts vi. 3, *Brethren, look ye out from among you seven men*, &c. verses 5, 7. And these were to be entrusted only with the money, or temporal things of the church. And nature, and universal custom, teach us that physicians and lawyers, who are entrusted with the care of the bodies and estates of men, are not imposed on us by others, but are chosen by the persons who intrust them. If I would learn philosophy, or any science, art, or trade, I have a natural right to choose who shall instruct me in it. Even children are allowed to choose their own guardians; and boys, who are apprentices, to choose their own masters. And doth not reason loudly proclaim this truth, that the guides of our souls in religion ought to be chosen by ourselves when we are at the age of man, as being a matter of dearer, and more divine importance than any other; and an affair in whose success none can be so much concerned as ourselves? For it is of ourselves that God will expect a final account. Let us take heed then to our own conduct in this matter, and remember, that the New Testament has never appointed any uninspired men to choose pastors, or teachers, for a whole assembly of people, and impose them upon the assembly, or upon any particular members thereof, against their will.

3. It is certain also, that due care ought to be taken that the persons be fitly qualified who are chosen into this office or ministry: And though private Christians have a right to choose their ministers, and may best judge of the general suitableness of their talents to their own edification, yet they are seldom so fit judges of the learned qualifications of ministers, as those who have been some years ministers, pastors, or teachers themselves, whether of the same, or of neighbouring churches; and therefore, reason tells

us, it is generally most proper that some of these more knowing and experienced men should be consulted in this matter; and, after due examination and knowledge of the person, their approbation be obtained to encourage the choice of the people, where it can be conveniently had: And therefore, in Scripture, as I shall shew immediately, we never find any ordinations by the people alone, without superior helps; nor should it ever be done where such helps can be obtained.

4. May I not add, It is certain also, that there ought to be some sacred solemnity attending the investiture or ordination of every such officer? This has always been done in all nations, both in civil and sacred affairs. This ought to be done by a solemn and public dedication of himself to this service, with the prayers of the church concurring to seek a divine blessing on him therein. Reason itself dictates this as a most proper practice. And it is certain, that the union and assistance of a few other ministers, both in prayer and exhortation, make a sort of beautiful harmony, and add solemn weight to this transaction of dedicating a person to God: They are generally better capable of offering up the prayers of the society to God on such an occasion: They are best able to give a word of counsel or advice to the new minister, and to the people; which is a ceremony that should usually attend such an investiture into this office; for *every thing is sanctified by the word and prayer;* 1 Tim. iv. 5. And this will have a tendency to maintain a happy union and correspondence between different assemblies of the same religion, whether the ministers put their hands on the head of the new minister or no.

5. This is also certain, that the imposition of hands, or any ordination whatsoever, by bishops, or presbyters, can never be absolutely necessary to make a new presbyter or bishop; for the Lord Jesus Christ would never leave the subsistence or propagation of his churches, or the virtue or efficacy of his word and his sacraments, to depend on the uninterrupted succession of any office or officer, bishop or presbyter, to be transmitted from hand to hand, by any necessary forms of ordination, from the apostles' days down to ours; for then it would be impossible for any church, or even for any particular Christian, to know whether ever they have had an authentic minister, whether they have ever received the gospel truly, or partook of any true sacrament, or have any just hope of salvation; because it is impossible for plain Christians, or even for any ministers in our age, so far from the apostles, to be absolutely assured that such ordinations have been rightly transmitted through sixteen hundred years, without any one interruption. And I might add, the only evidence and proof that any persons pretend to have of such a succession, is through the papal chair, which is attended with abundant uncertainties and impossibilities; as has been often shewn by protestant writers.

There is another reason also why the ordination, or imposition of hands, by either bishops or elders, or any superior character, cannot be absolutely necessary to make a minister, or ordain a pastor, in a particular church; and that is, that a whole nation may be corrupted, and every bishop and elder therein may be departed from the faith and practice of the gospel, as it was in England in the days of popery: Then, if a certain number of good men join themselves in a church, or voluntary society, for the sake of reformation, and enjoying pure worship, they can never have a minister settled and ordained among them, while these corrupt clergy around them refuse their assistance, and even forbid and oppose it to their utmost. But our blessed Lord would never leave his people, who desire reformation, under such circumstances of impossibility to

be reformed. There must therefore, in some cases, be a power of ordination vested in the minister and people themselves, without the absolute necessity of recourse to others, and this is called a mere independent, or a popular ordination; as that by bishops is called episcopal, and that by elders, presbyterian.

6. Will it not follow, from all these premises, that when there are no inspired persons in a church, and the christian assemblies are left to the ordinary ways of supporting themselves from age to age, and of supplying themselves with officers for their edification, these church affairs are to be conducted by such plain rules and dictates of the light of nature and common prudence, as are mentioned before, and which, in the days of extraordinary gifts, were never contradicted; though those extraordinary gifts, at that time, might sometimes supercede the necessity of some of these prudential rules? Yet always keeping an eye to the conduct of the primitive churches, so far as the extraordinary persons and gifts, orders and actions, in those times, did not plainly interpose to superadd any thing above and beyond what was practicable and proper in ordinary cases; and always taking care that nothing be imposed as necessary, but what Scripture, and the plain reason of things, have evidently made so; and managing all other prudential concerns by the joint opinion and consent of the society itself. I think, if we act by this rule, we cannot displease Christ our Lord, even though we should happen to mistake in some little formalities.

7. Though the people in the uninspired ages of the church must always choose their own officers, and perhaps, in some uncommon cases, may ordain them alone; yet, since in all the rules, directions, and examples, which we have in the New Testament, about the ordination or mission of any new officers, there is mention made of some superior person or persons, apostles or evangelists, elders, prophets, or teachers, appointing or ordaining them, or praying for them, or conferring gifts upon them, or committing the gospel to them, or laying hands on them; and since there is not any one appointment, mission, or ordination, either of deacons or ministers, that I know of, in the New Testament, without some one or more of these things, I am ready to think this might be so far an example to us, as that we should not too easily and readily encourage the ordinations of new ministers, to be performed totally and merely by the people, without some person or persons of superior characters, that is, bishops or elders, engaged with them in this work; except only, as was said before, in cases of such necessity, where the concurrence and assistance of such elders as are sound in the faith and pious in life, could not be obtained. Though popular ordinations may be valid, and may be sometimes necessary, yet it seems more regular, according to Scripture, to have usually the active concurrence and assistance of some elders therein; and where their assistance may be obtained, I cannot call it a regular ordination without them.

8. And in the last place, I would say, that since there are some texts in the New Testament, wherein single persons, either apostles, as Paul and Barnabas, ordained ministers in the churches; or evangelists, as Timothy and Titus; and since other missions or ordinations are intimated to be performed by several persons, *viz.* prophets, teachers, elders, or a presbytery; as in *Acts* xiii. 1, and 1 *Tim.* iv. 14; since there is sometimes mention made of the imposition of hands in the mission of a minister, and sometimes no mention of it; and since it is evident, that in some cases popular ordinations are, and must be, valid without any bishop or elder: I think none of these differences should be made a matter of violent contest among Christians; nor ought any

hard words to be pronounced against each other by those of the episcopal, presbyterian, or independent way. Surely all may agree thus far, that various forms or modes, seeming to be used in the mission or ordination of ministers in primitive times, may give a reasonable occasion, or colour, for sincere and honest searchers after truth, to follow different opinions on this head; and do therefore demand our candid and charitable sentiments concerning those who differ from us.

And indeed, the chief ground of the differences between all Christians in matters of ordination, is that wherewith I began this section, *viz.* that it is an uncertain thing, whether several of these particular modes and actions, in the furniture, mission, or ordination of a minister, which are mentioned in the books of the New Testament, do really belong only to the extraordinary days of inspiration, or whether they must be imitated as our example, in all ordinary occurrences of the church; always supposing and maintaining, that none of these ceremonies or assistances from other ministers or elders, are always and absolutely necessary to the mission or ordination of a new minister; since there may be seasons wherein the concurrence of good bishops, ministers, or elders, cannot be obtained; at least, not with any tolerable conveniency, or without sending abroad to far distant nations.

SECTION IV.

THE REST OF THE INSTANCES WHEREIN REASON AND REVELATION AGREE IN MATTERS OF SOCIAL WORSHIP.

BUT it is time now to proceed to the eighth instance of church affairs, and shew how far the common sense and reason of mankind concur with the revelation of the New Testament in this matter.

VIII. The light of reason further teaches us, that persons who are set apart for these religious services, and whose time and thoughts are much to be employed in them, that they may render public worship useful and entertaining to the people, and who have a charge to take care of the conversation of others as well as of their own, will not have much time to spare among the cares and businesses of this world, to provide themselves with necessary food and raiment, a comfortable subsistence, and the conveniencies of life; and yet it is proper they should be honoured and supported above the very lowest ranks of the people, lest their ministrations be brought into contempt by their poverty: And, upon this account, in all ages and in all nations, the very light of reason has directed mankind to support and maintain their priests, or those that minister to them in things sacred.

And does not the New Testament and the authority of our Saviour, by his apostles, decree and maintain the same thing? 1 Cor. ix. 13, 14: *Do ye not know that they who minister about holy things, live of the things of the temple,* and that both in jewish and gentile nations? And *they which wait at the altar are partakers with the altar; even so hath the Lord ordained, that they which preach the gospel should live of the gospel.*

But let it be observed also, that though christian ministers should be so supported in temporal things, that they may not labour under perpetual cares and daily anxieties, how to get bread and raiment for themselves and their families, and that they may main-

tain their proper authority in preaching, reproving, and exhorting, and live above the fear or shame that may arise from poverty and dishonourable dependencies, yet there is no rule nor example in Scripture that should raise them so far above the people in riches or grandeur, as to become lords of God's heritage, or tempt them to assume sovereign dominion over their conscience, faith, or practice.

IX. With regard to the poor that happen to be joined to any religious societies whatsoever, reason and humanity dictate to us, that they ought to be maintained by certain contributions of their neighbours, or the towns and cities wherein they dwell; for this is a matter of civil concernment, and a sort of natural duty to our fellows, as man is a sociable creature.

But if the civil society, or place where they dwell, does not take care to maintain them, and especially if they are neglected because they do not profess the established or national religion, reason tells us, it is then certainly the duty of those who are combined in that special religious society, to take care of their support. For what pretence can a man make to serious religion towards God, if he will not shew his love to his neighbour, and especially to one who loves the same God also? 1 *John* iii. 17, 18. Now that this provision for the poor may be managed with regularity, prudence, and success, the light of nature teaches us, that one or more persons of the society should be chosen, to collect such charitable contributions from the assembly, and to distribute it with equity, prudence, and goodness, for the support of the poor.

And does not the New Testament give a plain command, when the care of the poor of the church at Jerusalem was too burdensome for the apostles, or ministers of that congregation, to choose out persons for this purpose, who were afterwards called deacons? *Acts* vi. 1—6, When some of the widows were neglected in the daily ministration, or charitable supply, *then the twelve apostles said to the multitude of the disciples, it is not reason that we should leave the word of God and serve tables. Wherefore, brethren, look you out among you—men of honest report, full of the Holy Ghost and of wisdom,* whom we may appoint over this business. And when they had chosen them, they set them before the apostles; and when they had prayed, they laid their hands on them.* There are also particular directions given, what sort of persons should be chosen to this office of deacons; their characters are written down at large; 1 *Tim.* iii. 8—13; because it was designed to be a standing office in the christian church through all ages.

As the deacons are persons appointed by the New Testament, to take care of the money collected by the church for the supply of the table of the poor, so the same persons are very naturally and properly employed in christian churches, to take care also of all other contributions of the society, for the supply of the table of the minister, and of the Lord's table at the holy communion. With them also are entrusted other necessary expenses and outward accommodations that belong to public worship.

* It is granted that the deacons then chosen at Jerusalem, had extraordinary gifts. Stephen was a noble speaker, and might occasionally teach the gospel; Philip also was either a preacher then, or might use the office of a deacon well, and so grow up to an evangelist; *Acts* vi. 3, 8, and viii. 5—13, 26—36; and thus have power to baptize, *verse* 38, as is intimated in 1 *Tim.* iii. 13. But these powers or gifts did not arise from their office as deacons. Some of them had these gifts before, in common with multitudes of converts in the primitive times: And these gifts might perhaps fit them the better to discern who were proper persons to be supported out of the churches' stock, and to give a word in season occasionally to the poor, of whom they had the care. But the mere office of deacons, which consists in assisting the ministers to take care of feeding the poor, and of laying out the public money continues, when these extraordinary gifts are ceased, and the characters of persons fit to be chosen do not necessarily include public preaching: Nor do we find διδακτικὸν or "aptness to teach," mentioned among the characters of a deacon.

X. I add yet further, the light of nature and reason teaches us, that all the management of religious affairs in a society should be performed with a decency and dignity becoming the things of God; and with due regularity and order; for he *is a God of order;* with gentleness also, and condescension, peace, and love, for quarrels and fighting destroy religion, and break all the bonds of religious society. And are we not taught the same things in the New Testament? Are not Christians continually called upon to *put on charity, which is the bond of perfectness?* Colos. iii. 14; *to do all things without disputings and murmurings?* Phil. ii. 14; *to do all their things with charity?* 1 Cor. xvi. 14; *and that all things should be done with decency and in order?* 1 Cor. xiv. 40; and that as they ought to keep peace at home, and in the church of Christ, *they should give no offence, neither to Jews nor gentiles,* but, as far as *possible, live peaceably with all men?* 1 Cor. x. 32. Rom. xii. 18.

In the last place, the light of nature and reason also acquaints us, that when persons who belong to one religious society travel to distant places, they should have some recommendations by epistles to other societies, which are built upon the same religious principles, that they may be received into their assemblies, and enjoy all the parts and privileges of worship and friendly society together with them. This is called occasional communion, to distinguish it from that fixed and constant communion, which the agreed members of the same religious society constantly enjoy.

And here also the New Testament very happily concurs with the dictates of reason and common prudence: For when primitive Christians were called by Providence to a distance from their own dwelling, and from that church with which they usually worshipped, they were recommended by letters unto other christian churches in the world, that they might be received by them into all the parts of christian fellowship. Such epistles St. Paul speaks of 2 *Cor.* iii. 1; he needed them not, though others stood in need of them: And such a recommendation had Phebe, a member of the church at Cenchrea, when she travelled to Rome; *Rom.* xvi. 1, 2, *I recommend unto you Phebe our sister, who is a servant of the church at Cenchrea, that you receive her in the Lord, as becometh saints.* And such a recommendatory letter was written by the brethren of Ephesus, to commend Apollos to be received by the churches of Achaia; *Acts* xviii. 27, *The brethren wrote, exhorting the disciples to receive him.*

SECTION V.

WHERE REVELATION IS SILENT, REASON MUST DIRECT.

THUS we have seen a variety of instances, wherein the rules of Christianity and Scripture, so far as relates to social religion, correspond with those which the light of reason and prudence would dictate to wise and sober men, engaged in a religious society. Some of these are represented to us in the New Testament, as express commands; others we may draw by easy reasonings from the examples of the apostles, and the primitive churches, as well as from the circumstances which are contained, either in the matters of fact, or in the exhortations that relate to them.

And here I would observe, that though right reason might guide us into most of the same practices, yet it is a vast advantage to us, that we have so many of these things prescribed, intimated, or approved by the inspired writings of the New Testament: For

so imperfect is our understanding, and so weak our judgment, that the reasonings of men, even of a single congregation, or their humours which go for reason, would not easily agree in the same methods and forms of management, and there would probably be a far greater variety of opinions, and greater difficulties in the conduct of church affairs, than now there are; though even now there are so many, that render the christian world a theatre of perpetnal contest: But it must still be acknowledged, that one main spring of the controversy is, because the passions, and pride, and interests of men, will not suffer them to hearken either to reason or Scripture.

Though Scripture hath determined so many particulars in a perfect conformity to right reason, yet it must be confessed there are other things which relate to christian worship and order, which are past over in silence, or at least are not mentioned and prescribed with such plainness and evidence in the word of God, as is sufficient to direct every single punctilio of our practice. It is the pretence of finding out in Scripture every lesser particular piece of conduct in a christian church, even such as belongs to all religious societies, that has tempted men to run to the Old Testament, and inquire of Moses and Aaron for advice, where they could not find it expressly written in the New, and strangely to warp and pervert many texts of the New Testament from their native and proper meaning.

Let it be granted then, that Scripture is silent in some little particulars about social religion: But even here we are not left without any direction, nor are we sent to uncertain traditions to make up for the silence of Scripture, but we are naturally remitted to the common reason of things, and human prudence as our guide.* Yet always, as I said before, keeping our eye pointed towards the New Testament, and forming our reasonings as far as possible on the same principles which seem to run through the social religion of the primitive times, so far as it did not depend on those extraordinary inspirations. Let us give also some instances of these.

1. Scripture does not tell us how many persons must go to make up a christian church: But reason will help us to answer this question, if we consider that the word *ecclesia*, or church, properly signifies an assembly of people, and so it is used in the New Testament, where it has no relation to a christian society, as among the heathens at Ephesus; *Acts* xix. 32, 39, 40. A very few therefore may be called an assembly, and may be sufficient to join together in christian fellowship, that they may partake of the Lord's-

* The "sufficiency and perspicuity of the Scripture in things necessary to salvation," is not at all impeached by this concession; for, 1. The determinations of some lesser affairs relating to public worship, or the conduct of christian societies, are not things necessary to the salvation of any particular person, or to the essence or being of a christian church, though they may be needful to its well-being, and its comfortable and regular subsistence. 2. When Scripture is said to be "sufficiently full and clear in all things necessary to salvation," this doth not mean to exclude the common exercise of the reason and prudence of men, in order to apply the general directions of Scripture to particular cases which occur, even in things which are necessary to salvation. As for instance: Scripture bids us "do good and relieve the poor:" But it doth not tell us how many poor we must relieve, whether two, or twenty, or two hundred, nor whether for one day, or many, &c. This must be determined by the particular circumstances of every Christian, and by the exercise of his reason and prudence, upon the special occasions and objects which appear. Again, Scripture requires of us "to deny ourselves, and to mortify our appetites and passions:" But it leaves it to the reason and prudence of every Christian, in what things, at what seasons, in what manner, and in what degree this must be done, and how far we must go in mortifying all passion and appetite, or in acting self-denial, since it is certain we are not called to root out every passion, to resist every appetite, nor to deny every natural inclination. Thus the honour of Scripture is still secured, both as to its "perfection and its perspicuity in things necessary to salvation," though in many lesser particulars, and in the application of general rules to actual practice, we are forced to recur to the exercise of human reason and common prudence, both in things of greater and lesser importance in the christian life. The Scripture supposes us to be rational creatures, when it teaches us to be Christians.

Supper, and carry on the face of public religion, when there are no other Christians in the place where they dwell. And on the other hand, there should usually be no more in a church than can meet together in one place, can act as one assembly, and join in social worship, in prayers and praises; for the apostle, writing to the Corinthians, speaks twice of "the whole church coming together in one place;" 1 *Cor.* v. 4; xi. 20. and xiv. 23. And the church of Antioch, which was large, met all together; *Acts* xiv. 27. Perhaps those words, *Rom.* xv. 6, *that ye may with one mind and one mouth glorify God*, may limit the number of a church usually to so many as can join in attention and suitable meditation, while one mouth speaks in a way of instruction, prayer, or praise. Such probably were the churches of Asia and Galatia, and in several towns and cities of which the New Testament gives an account.* But sometimes the word church is applied to a very small, or a very large number.

The word Εκκλησία, or church, sometimes signifies a few Christians in a house; so *the church in the house of Priscilla and Aquila*, is saluted by St. Paul, in his *Epistle to the Romans;* and the same church salutes the Corinthians in the end of St. Paul's first epistle to them, though it is certain there were many more Christians round about them in Rome. Very probably Doctor Whitby's sense is just on these Scriptures, *viz.* that this phrase is used concerning such whole families as were converts to the christian faith. And, besides, Christians might meet together by agreement, in lesser societies, for any spiritual occasions, and every such society might sometimes be called a church, or a christian assembly. Common prudence thought ten men enough to make a synagogue among the Jews. Our Saviour says, "Where two or three are gathered together in his name, there he is, or will be in the midst of them;" *Matt.* xviii. 20. But this does not prove plainly that there should be a church formed where there are but two or three Christians: Prudence must direct in this matter, since Scripture is silent.

But on the other hand, we may inquire how large may a church be? The multitude of Christians in Jerusalem, *Acts* xv. 12, are called *the church at Jerusalem;* verse 22, and *Acts* xi. 22. Not that it is necessary to suppose all the three thousand who were converted, *Acts* ii. 41, and all the five thousand, *Acts* iv. 4, to be members of the church at Jerusalem; for this being done in the days of pentecost, multitudes of Jews and proselytes were come from other nations, to celebrate that festival, as *Acts* ii. 9, who being converted, returned to their own home. And it seems evident from the history, that when the apostles, elders, and brethren were met together at Jerusalem, to determine the question about circumcision, the whole church, together with the apostles and elders, wrote the letter, and sent messengers with it to Antioch; *Acts* xv. 22, 23. So that it is possible one place might hold them, and they might make but one assembly.

But supposing they were too numerous to meet together in worship at once, especially in a time of persecution, they might divide themselves into smaller assemblies, for preaching and praying, and might *break bread from house to house*, if that phrase should signify the celebration of the Lord's-Supper, *Acts* ii. 42, 46.

Let it be further observed, that if the church at Jerusalem at that time was too large

* There was a sort of union even of all the jewish national church *in one place*, three times a year, by the congress of all the males who were representatives of the nation at Jerusalem; and perhaps they might join in the solemnity of some sacrifices by the aid of loud instruments of music in the temple, according to the figurative worship of the levitical dispensation, so that they made one huge congregation worshipping together, or at least successively in the several days of the festival.

for one worshipping assembly, christian churches were but forming at that time, and might not be absolutely formed and settled in the most perfect and convenient methods, for regular continuance and edification. Human affairs can proceed but by degrees, by reason of our weakness, even though they be conducted by divine inspiration.

Or perhaps, as all the Christians in the world are sometimes called the church, so all who were in one city, may be called the church in that city, and the Christians in one house may be called "the church in that house," though they were not united by any other bond of agreement, but that of their common Christianity. Yet I believe it will be found, that a christian church, in its most usual form, was made up of so many as could conveniently meet together for worship, and consented to do so; and the reason of things seems to make this most convenient for many purposes of edification and mutual help.

II. Scripture is silent how any of the lesser or circumstantial affairs of worship or order, should be finally determined in a church, when there are some of the members of different sentiments, and make an opposition. But the light of reason and common prudence teaches us, that in such affairs which God has left to the determination of men, such as the appointing the place and the hour of worship, choosing a minister, or the like, the major part of the assembly must determine it by their vote, and the lesser part ought to acquiesce, where it is not contrary to the dictates of their conscience, their edification in faith and holiness, or their reasonable conveniency. But if the lesser part solemnly declare they cannot comply therewith, they may peaceably depart to another society of Christians, who may be more entirely of their mind, for there must be no imposition; yet the major part may surely act for themselves.

May I have leave to add this further also, that if the society shall agree to have nothing determined in a church, without a vote of two-thirds of the members, I do not see it unlawful to make this agreement: And perhaps if this were generally practised it might tend to the greater unanimity and peace of churches, because in any debate the dissenters would be the fewer.*

III. The New Testament is very silent about the combination of particular congregations, by some common band of union to make one national church. What does the light of nature teach us in this point?

I answer, There never was but one national church of God's own appointment; that was the church of the Jews; and he himself saw fit to dissolve it: Nor has he given men any revealed order or authority from himself to raise and establish another: Yet certainly the light of nature may sometimes direct and lead many christian congregations, even all that are in a county or in a nation, who agree in the necessary articles of Christianity, to combine together and agree to assist each other many ways by counsel, encouragement, and support, in the maintenance of their sacred religion, always in a consistency with due allegiance preserved to their civil governors. The churches in a county, or any particular district, may agree to send their ministers to consult together about their common welfare: They may choose one person to transact matters of

* The conclave of cardinals at Rome, who are supposed to have the wisdom of this world in perfection, never will choose a pope till two-thirds of them are agreed in the same person: And hereby they keep the whole hierarchy and system of that antichristian building and government in greater unanimity and peace. Why may not Christians learn the wisdom of the serpent from the men of this world, so long as they do but maintain the innocence of the dove?

public and common concern for all the congregations in a county, and may bestow on him the name of an overseer, a superintendant, or a bishop; and so all the churches in a nation may desire their own ministers, or they may desire these their representatives or overseers to join themselves in a common assembly or council for the public care of their liberty, or security of their peace, or advice in matters of consequence relating to their particular churches. And this assembly may choose a president, and may call him their chief overseer or their archbishop; as I see nothing unlawful in all this, so neither do I see any ordinary necessity for it.

I add further, that many particular churches, by their ministers, deputies, or messengers, met together, may contrive and agree in what manner to carry on the work of preaching, catechising, expounding, prayer, or psalmody; they may consult what subjects are chiefly necessary to be insisted on in preaching, at special seasons and occasions; what psalms or hymns to be sung, and how often psalmody to be repeated in a day; what days or hours may be set apart for prayer and humiliation, or thanksgiving on special occasions of danger, or deliverance, &c. And if these things be agreed with much unanimity, by many wise and pious men, met together by the request of the churches, for this purpose; and these matters be determined, so as plainly tends to the common safety and edification of the whole number of churches in a country or nation, the particular churches which are there, and especially particular persons in any such church, according to the common rules of society, should usually consent and agree to such public and almost unanimous agreements of their deputies in these matters, unless they can shew some very plain and considerable reason against it. Reason itself, or the light of nature, dictates this, that a very few persons should not humourously set themselves against such a general agreement in things which are in themselves indifferent; and which are left undetermined by the New Testament; and which must be determined some way or other by the agreement of Christians.

But still I think it must be maintained, that though all the churches in a nation should be united and combined in this manner by their representatives, and call themselves one national church, they could acquire no divine right or authority hereby, to impose any new doctrines or practices in religion, any creed, or articles, or canons, or rules of worship, of their own making, on any particular church or person whatsoever, without their own consent. Neither the light of nature, nor the New Testament, so far as I can find, has given them any such power.

IV. Scripture is also supposed to be silent how far the power and government of elders, or bishops, may extend, though it calls them sometimes *rulers*, and requires the church to obey. Heb. xiii. 7, *Remember them who have the rule over you, who have spoken to you the word of God:* And verse 17, *Obey them who have the rule over you, and submit yourselves; for they watch for your souls.*—May they not therefore invent new ceremonies of worship, and by their authority determine any of those matters in a christian society, which Christ has left undetermined in his word?

I answer, If scripture be silent herein, let all church rulers take heed that they extend not this power beyond the actual commission or grant of Scripture. It is always safer, in points of dominion, to confine one's self within the limits of the express grant or commission, than to go ever so little beyond it. When our natural ambition would tempt us to exceed these limits, our awe and dread of invading the province of Christ should be an everlasting restraint.

Besides, when neither the light of reason nor Scripture gives sufficient evidence of any authority to assume such a power, why should it be assumed? Reason tells us, that no man knows what rites or ceremonies will be pleasing to the great God, beyond the plain dictates of natural religion, unless God himself has revealed and required them.

The great and blessed God, when he would be worshipped with a variety of outward rites, established a church in Judea, with a hundred ceremonies, and new forms of worship and order; but he thought fit to abolish them again when the Messiah brought in his more spiritual kingdom, that is, the christian church. Now therein there are but two such ceremonies, of most plain and evident divine appointment; baptism and the Lord's-Supper; or, if you will, add the observation of the Lord's-day. And it is not to be supposed that God would abolish and destroy a hundred ceremonies of his own institution, and give the fancies of men leave to invent a new scheme of ceremonial worship at their own pleasure, and impose new-invented rites upon their fellow Christians; especially when we are required to *stand fast in the liberty wherewith Christ has now made us free, and not to be entangled with yokes of bondage;* Gal. v. 1. What a strange medley of superstitious and ridiculous fooleries would be introduced into christian worship, if the elders or rulers in any ages of the church might invent ceremonies at their pleasure, and impose them on the people! The church of Rome, by this means, is become a theatre of jewish and heathen pageantry, to the great dishonour of God, the reproach of Christianity, and the hazard and ruin of the souls of men.

It will be replied here, But is not some power of rule and government still given to judges in a nation, and to magistrates in a city, notwithstanding the unhappy consequences which may arise from the abuse of this power? The abuse of authority does not prove there is no such authority: Even so in churches, the power may be abused; yet surely, there must be some persons who have power and authority, rule and government, lodged in their hands, even since the days of inspiration and extraordinary commission; for without it every society will run into great disorder and confusion. Pray what is this rule or power of government, which is granted to ordinary ministers in a christian church; and wherein does it consist, if not in appointing such things as Christ has left indifferent? To this I answer:

The rule and government which is committed to ordinary ministers in the church, so far as I can understand it, seems to consist in these things following, *viz.* in going before the people, and leading the several parts of their worship, and becoming their example in every duty; in teaching them the principles and rules of their religion; the knowledge, profession, and practice of those doctrines and duties, that worship and order, which reason and natural religion dictate, and that which Christ himself has revealed, superadded, and established in his word: It consists in exhorting, persuading, and charging the hearers with solemnity in the name and authority of Christ, to comply therewith; in instructing the people how to apply those general principles and rules to particular cases and occurrences, and giving them their best advice; in presiding in their assemblies, and particularly as to the admission and exclusion of members: It consists in watching over the flock; in guarding them against errors and dangers; in admonishing, and warning, and reproving, with all gravity and authority, those who neglect or oppose any of the rules of Christ. But I cannot find where our blessed Lord has given them any power, or pretence of power, to impose on conscience any such advices of their own, which neither reason nor revelation impose; much less to impose

any of their own inventions of new doctrines, or duties; or so much as their own peculiar explications of the words of Christ, by their own authority. When our Saviour gave commission to his disciples, or his apostles, to *preach the gospel to all nations*, it was in this manner; *Go teach them to observe*, not whatsoever you shall command, but, *whatsoever I have commanded you;* Matt. xxviii. 20.

It is granted, indeed, the apostles had authority to explain the meaning of Christ to the churches by inspiration; but even they were not entrusted to invent any new doctrines or laws of their own, and impose them upon men.

And as these inspired persons have communicated to the churches all that Christ designed, we must rest there. And since Christ is the only Lord of his own church, whose wisdom is infallible, and whose power and authority are unquestionable, it is very unreasonable to suppose that he should leave any part of the doctrines or duties of Christianity to be invented, or imposed upon his churches by men, whose best wisdom and knowledge are weak, and fallible, and uncertain; and their authority so doubtful and questionable, or rather so null and void, as to any inventions and impositions of their own.

Alas, what wretched work would such a supposed authority make in different churches, in the same age! What contentions, and endless confusions, would be raised among Christians! What different and contrary opinions, and ceremonies, and forms of worship and practice, would be imposed on distinct churches, and all called by the christian name! Has not the whole church of Christ suffered infinite damage by these pretences?

What mischiefs and strifes, and schisms, would arise in the same churches, by the different sentiments and injunctions of different elders or pastors in the same church! What eternal innovations in churches, as to their faith, worship, and practice, when pastors die successively, and others, of different principles, come in their room! Has not the world seen too much of this already, in every age of the church?

Observe with what zeal St. Paul, the greatest of the apostles, exclaims against any such sort of power, even in himself and his fellow-teachers: *What is Paul, or what is Apollos, or what is Cephas*, or Peter, *but servants, or ministers, by whom ye were taught to believe the same gospel*, or the same religion and institutions of Christ? 1 *Cor.* i. 12, and iii. 5. "We are far from being lords of your faith: We are only *the helpers of your joy;*" 2 Cor. i. 24.

As for the lesser things, which Christ has commanded, and which are necessary to be determined some way or other in a church, as in any other human society; such as the appointment of the place and hour of meeting, the choosing a president, the method and order of their religious exercises, &c. these must be agreed, or at least consented to, by the society itself. A judge in a court, or a magistrate in a city, has no power to make any new law: His business is only to explain and apply in general the laws that are made, according to the best of his understanding: And after all, it is a jury of twelve men, in our national courts of justice, that determines the affair with regard to particular things or persons. So ministers in the church are not lords or sovereigns in Christ's kingdom: They, in their highest character, can be supposed to be set up but as judges, to explain his laws, and apply them to rising occasions, and shew men how "to do all things decently and orderly;" 1 *Cor.* xiv. 40: But in many cases of church

affairs, it is the people that must actually apply them to particular persons or occurrences. Ministers have not any dominion given them, either over our faith or practice.

It may be observed also, that the names which are given to ministers in Scripture, do not signify sovereign rule and authority: Their name is ministers or servants, and they are never called lords or commanders, but leaders, presidents, stewards, shepherds, teachers, elders, overseers, &c. all which intimate a limited authority, and not supreme power.*

But as many writers among the puritans and nonconformists have handled this matter abundantly in the last age, so the reverend and learned bishop Hoadley, in latter years has happily laboured to guard this prerogative of Christ to make laws in his own church from the usurpations of men; and therefore I insist no further on this particular.

V. Though the Scripture be silent about the extent of the power of particular bishops or elders in a church, yet some may say, Does not the light of nature teach us, that many grave and wise persons, the bishops and elders of many churches, meeting together in a synod, or solemn council, may join and make laws, or constitutions for all the churches under their care? And are not the churches bound to obey? First, I answer:

Answer I. It is granted, that the light of nature would lead the wisest persons sometimes to meet together for mutual advice and counsel; but I know not of any natural or scriptural right, that ministers joined in a synod, have to make new laws for christian churches; nor have single Christians or congregations any right or leave, much less any obligation, to subject themselves and their consciences to such a dominion of men, in things which neither Scripture nor nature requires. It is the ready way, by degrees to put other kings into the kingdom of Christ, who alone is Sovereign in his church. It is a dangerous thing for Christians to give up themselves to the will of fallible men by such a subjection; and they will find, by woeful experience, many things, by degrees, imposed upon them, that will neither suit with their conscience or their conveniency, with their own inclination, or their faithful subjection to Christ. What has been the event of this in all ages may justly be again expected, if the same experiment be made. I answer, secondly:

Answer II. If this were once allowed, may not these ministers thus met together in one nation, upon the same principle, depute some of their number to join with such sort of deputation of christian ministers in other nations, till at last they devolve all their power upon one small assembly or general council, or upon one single person, who may be deputed or appointed to determine for them all? If these sort of deputations carry any authentic power with them, to make laws for conscience, they may be carried on as far as an universal council, or a pope, before they stop, and we are at Rome ere we are aware.

* "Governments" is the strongest word of authority used to denote any office in the christian church, and that is but one; 1 *Cor.* xii. 28. And some learned men are of opinion, this name signifies deacons, whose government reached not to the faith or conscience, but they distributed and disposed of the money wisely, which the helps just before mentioned, that is, men of wealth and goodness, gave toward the support of the poor. See Mr. Chandler's *Commentary on Joel*, page 150. Or if these governments imply high authority and power, let it be remembered, it is only mentioned as an office in the days of inspiration, and is joined with apostles, prophets, evangelists, gifts of tongues, &c.

You will reply, perhaps, Is there not some encouragement given to the government of the church, by assemblies, councils, convocations, or synods of bishops or elders, in that famous chapter, *Acts* xv. where they met about that great question, "Whether the heathen converts should be circumcised or no?"

But the answer to this is very easy: This was not a council of elders or bishops, for here are the brethren of the church at Jerusalem joined together with the apostles and elders: And besides, that assembly had so much of the extraordinary gifts of the Spirit of God in them, that they could justly pronounce, *It seemed good to the Holy Ghost, and to us, to lay upon you no greater burden;* verses 22, 23, 25, 28. Now when persons divinely inspired, as those apostles and elders, and many of the brethren were, shall meet together for such a purpose, I have nothing to say against their determinations. But let ministers in their councils, in later ages, take heed how they assume lordship over conscience, till they are furnished with such gifts, and can make such a divine commission appear, as will warrant them to say, *It appeared good to the Holy Ghost, and to us,* to appoint so and so.

Perhaps it will be replied here, The apostles and inspired persons knew what was the Christian's duty before, and could have determined this question by their extraordinary gifts, without convening in a council or synod; but probably the providence of God so ordered it, that even inspired apostles should meet and debate this point in a synod, on purpose to teach all succeeding churches what is to be done in such a case, and to shew how their difficulties and controversies should be authoritatively determined by synods, even to the end of the world.

Answer I. And I have as much right to say, perhaps the apostles, Peter, and James, &c. did not know this matter so well before, and therefore could not have determined this question without convening in a council; for their divine revelations of many particular things were made to them, not all at once, in the days of pentecost, when the Holy Spirit came upon them; but this was done by degrees, and at particular seasons, as the occasions of Christianity and the churches required it. Peter did not know that he must preach the gospel to the heathens several years after that day of pentecost, when the Holy Spirit fell upon them in cloven tongues, till a vision from heaven taught it him, when Cornelius was directed by an angel to send messengers to call him to Cæsarea. And it is probable, God ordained this council to be called, not only to teach the church at Jerusalem, as well as the apostles, a full answer to the question in dispute, but to render the unanimous direction and appointment of so many inspired persons more public, more weighty and efficacious, than the voice of a single apostle would have been in so important a case of controversy between the jewish and gentile converts.

Answer II. I will allow that providence, perhaps, might appoint this council of wise and knowing men at Jerusalem to be convened, to teach the following churches and ages what they should do in cases of doubt and difficulty; that is, that they should meet together, and advise with one another, and debate matters freely and sincerely, according to that great rule of human prudence, which Solomon also teaches us: *In the multitude of counsellors there is safety,* Prov. xi. 14. And great deference should be paid to the advice of many aged, learned, and pious men, met in council. But if no inspired men are among them, they can only draw up their conclusion thus: *It seemed*

good to us, fallible men, to give our opinion or advice so or so; but not to determine absolutely for other persons, and make rules to bind the consciences of others, unless they could add, *It seemed good to the Holy Spirit* also, as well as unto us; for if the vote of a council of fallible men could bind us, why should not the council of Trent, or any other councils, bind us to all their antichristian decrees? The best constituted church or council may in time grow degenerate, and if they have such authority given them, they may make heathenish or hellish decrees, and bind them on the consciences of men.

Answer III. And yet further, in the third place, I add, if this decree at Jerusalem had not been the direction and determination of the Holy Spirit, by the lips of inspired men, why should the churches at Antioch, Syria, and Cilicia, *Acts* xv. 23, submit to a vote or opinion of the church at Jerusalem, any more than the church at Jerusalem should submit to an opinion of the church at Corinth, Rome, or Antioch? What was done at Jerusalem by inspired men once, on an extraordinary occasion, cannot be made a binding example, or rule, for the determination of conscience in all following times, and in ordinary church affairs, where no inspired persons are present; for by this precedent, one church would have power given it to determine for another; which I know no church pretends to but that of Rome.

And finally, It is plain, if this Scripture give authority to uninspired men, in ordinary cases, it gives this dominion to the whole church at Jerusalem, not to the bishops or elders only; for this was not a council made up of the elders, bishops, or representatives of the churches of Jerusalem, Antioch, Syria, and Cilicia, but of the apostles, elders, and brethren of the church at Jerusalem; and yet they authoritatively determined the case for the churches of the gentiles, which they should never have done, if there had been no apostles or inspired persons there.

Whatsoever, therefore, the church at Jerusalem determined as a duty for the gentile churches to practise in a dubious case, because it had apostles, and many inspired persons in it, can be no sufficient authority for synods, convocations, or councils of bishops or elders of modern churches, to determine other dubious cases, for their own or other congregations, and bind their consciences to any point of faith or practice merely by their authority, when they have no inspired persons among them. But I only glance at these things, and will not enter into a debate about them at present.

VI. Though baptism and the Lord's-Supper are ceremonies of divine institution, yet is not the New Testament in a great measure silent as to the persons who shall celebrate them?

I answer, The Scripture acquaints us, that the commission, "to baptize," was plainly given here to those who were appointed "to teach the nations;" *Matt.* xxviii. 20. And the light of nature shews us, that those persons who are furnished with talents, and chosen, and called, and solemnly appointed to preach the gospel to men, to offer up their prayers and praises to God, and to lead the worship in churches, are certainly, in the nature of things, the most proper persons to administer or celebrate such rites or ordinances as should be attended with the word and prayer; for "by the word and prayer is every thing sanctified" to its proper purposes in the kingdom of Christ; 1 *Tim.* iv. 5.

And yet, if no ministers, elders, or bishops, are near at hand, nor the ministrations

of any such are to be obtained, without sinful compliances, perhaps it may be better that some private member of that congregation, if sufficiently furnished with proper gifts, should be deputed or desired by the church, to perform these solemnities, once or twice, than that these institutions of Christ, which are so plain and express, should be omitted for a long time together, merely on account of doubtful disputables. Christ has most expressly commanded this duty; but who should administer this ordinance, and how ministers should be ordained, is much more obscure. If a congregation want a regular minister, yet the church should assemble for prayer; and exhortation or teaching, by reading or preaching, should not be utterly neglected: Why then should they neglect the Lord's-Supper? If a neighbouring minister cannot be conveniently obtained, may not a brother of the congregation, who has competent abilities, be desired to pray, or to read a sermon, or to exhort, rather than the church be without any public worship, or spend the Lord's-day at home, and that for weeks or months together, for a considerable time? And may not a person thus qualified, if no minister be within reach, be deputed, or called by the church, to break bread to them, rather than live without obeying the express commands of a dying Saviour?

Now I have ventured so far in giving my opinion here, I may the more confidently add, that this should not be practised on every little common occasion, lest great inconveniencies arise thereby, and for this reason, every destitute church should furnish themselves, as soon as may be, with a pastor or minister of their own, to go before them, and in a regular manner celebrate these divine rites of Christianity, which ought not to be long neglected.

Some other cases might be mentioned, which may fall out in a christian church, wherein we can find no plain direction or example in Scripture; and then reason and prudence must direct us: Where revelation is silent, reason is our guide.

SECTION VI.

CHRISTIAN CHURCHES FORMED LIKE CIVIL SOCIETIES, UPON THE PLAIN NATURE AND REASON OF THINGS.

Permit me here to give a little specimen, by way of similitude, how naturally a christian church is formed, when we suppose there are several Christians within the reach and knowledge of one another in this sinful world. It is raised in the same manner as any other civil society may be formed among men, especially among several natives of one country meeting together in a foreign land: And while I am representing their procedure, you may carry your thoughts of the formation and constitution of a christian church along with you in the simile, and apply it all the way.

Suppose three or four Englishmen, who have their residence in a city of China, happen to meet one another, and by conversation, finding that they speak the same language, they make it known to each other, that they are natives of the same country; they all profess allegiance to the same king; and though they sojourn for a season in a foreign land, and are engaged in many secular affairs there, yet they declare their resolution to behave as becomes Englishmen, while they are waiting for a call from their

sovereign to return home. They hereupon agree to meet once a week, in order to converse about the affairs of their own nation, to learn some tidings from it, to pay some special honours to their absent king, to learn further notices of his will, and to prepare for their return homeward.

The day which they appoint for their assembly, is the day of the accession of their king to the throne, in its weekly return: The place is also agreed among them such as may be convenient for their frequent attendance.

Other Englishmen, who are in that city, hearing of this society, come to their assembly, one after another, and desire acquaintance with their countrymen and brethren: They make it appear, that they are natives of the same land, that they own the same sovereign, that they are doing his will, and preparing to return home at his orders: And, in the mean time, they desire the privilege of being admitted into their society. Upon such a profession, and by the approbation of the society, they are received into this English fellowship with pleasure.

Now it is not to be supposed, that every one of them is capable of taking proper care of the best interests of this society, nor of speaking in an instructive and profitable manner concerning the things that relate to their native country, their laws, and rules of conduct; their king, and their common design of a return. They agree therefore to choose one person amongst them, who shall devote himself to this work, shall study the laws of their country, the rules of the proper behaviour of Englishmen, and the mind and will of their king; one who shall present their common allegiance to their sovereign, in frequent addresses sent to England, and shall spend an hour or two every week, in setting before them what honours they owe to the king of England, what are the blessings of their native home, what are their duties in a foreign land, what dangers they are exposed to among the heathen Chinese, and how they may best avoid them; what are the enjoyments they expect at their return, and the best methods of preparation for it. This man accepts the office, and by a solemn vow of allegiance to the king, and faithfulness to his countrymen in this trust, he enters upon his office.

Besides this, once in a month, suppose they meet together, according to an appointment of their prince, to eat a morsel of bread, and drink a glass of wine together, in memory of some great benefit which the whole nation of England received by a difficult and bloody enterprize of the king's son, when, in former years, he took a voyage from England to China; and they keep up this feast in honour to his name, wherein the provisions, after a short speech, are distributed to every member of the society, by the person whom they have appointed to instruct them in English affairs.

Now because this man spends a great part of his time in letters or dispatches to England, and in the study of English affairs, that he may the better entertain the assembly of his brethren at their solemn weekly meetings, the community agree to release him from the secular businesses of life, and join their liberality to maintain him with honour.

But here let it be observed, that though they pay so much respect to the person whom they choose to be their instructor, and to go before them in the honours due to their king, yet they do not entrust him to invent any new ceremony to testify their allegiance, nor to impose on them any new law or custom, but what he can find prescribed among the laws of their nation, and appointments of the king, or of his ambassadors to China. In these matters, indeed, he may require obedience in the name of their king; but in all

other things he must act according to the agreement or opinion of the society; which must be testified by the vote of the major part.

Among this community, some happen to be aged, or sick, or disabled for work; or they are fallen into poverty, and their circumstances are sunk in the world, notwithstanding their diligence and labour: These are not capable of maintaining themselves; the society therefore cheerfully contribute toward their support: And they entrust two or three persons with this money, and desire them to take care that the table of the poor be supplied. They entrust also with these persons what money they collect for the honourable maintenance of their teacher; and desire them to take care, that every thing necessary toward their weekly meetings, at a certain time, and at a convenient place, be provided at their public charge. They go on in this manner with much comfort and mutual assistance, in every thing that relates to their welfare in a foreign land; and rejoice in their hope to meet one day in England. And as they are ever adding to their society by admitting new members, upon their credible profession and appearance to be true Britons, in the room of such as are yearly called home; so if any among them prove to be false and insincere, and are guilty of crimes highly disgraceful to their profession of being natives of England, and their allegiance to their king, they have no other punishment for them besides that they are cut off from the society, and forbid to enjoy the privileges thereof any longer.

Now it is so very easy to apply these transactions of Englishmen in China to the affairs of a christian church, that I hardly need display the parallel. Christians profess to be natives of heaven, to be born from above: They sojourn for a season in the world, as in a foreign land, till their Father and King summon them home. They speak the language of the gospel, or of the kingdom of heaven, and understand it; and they know each other hereby: They agree to meet together to worship their king, and pay allegiance to him; to learn more of his will, and seek his favour. The day of their solemn assemblies is the day of the resurrection of Christ, the Son of God, and their Lord. When they do special honours to him, they eat bread and drink wine, to solemnize the memory of their deliverance from sin and hell, when he was sent into the world to die for them. Then, by calling away their hearts from this world, and conversing about heavenly things, they are continually preparing for their return home. They choose one or more teachers, pastors, or bishops, to instruct them in their duty, and to offer up their common addresses to God, in the name of Christ; to put them in mind of the things of heaven, and to walk before them in exemplary holiness. They choose deacons to relieve the poor, out of their public liberality, as well as to take care that their pastors or teachers be maintained. They receive in new members who are worthy, upon their profession; and they cast out those that are dishonourable. They walk onward in this way toward the heavenly state; and wait the summons from on high, to call them thither by death and the resurrection.

SECTION VII.

THE SEVERAL ADVANTAGES OF SUCH A CHURCH, OR CHRISTIAN SOCIETY.

So natural a scheme of social religion as this, does not need long and express forms of institution, after the great doctrines and duties of the christian faith and life are plainly

revealed and received. All that is found in the New Testament relating to christian churches, so happily corresponds with these dictates of the light of nature, and the affairs of the civil life, that it has made these rules much more plain, and easy, and practicable, than those of the jewish religion, or perhaps of any other religion, that pretends to divine revelation. This scheme is built on the eternal reasons and relations of things, as well as the word of God. The particular positive prescriptions relating to christian churches are but few, while the general duties of christian fellowship are such as the light of nature and reason seem to dictate to all societies whatsoever. It is the evil mixture of the needless and fanciful inventions of men, together with the plain and common dictates of nature and Scripture, and the impositions of these inventions on conscience, which hath done so much injury to Christianity, defaced its beauty, and tarnished its honours.

II. This scheme is perfectly consistent with every form and kind of civil government, whether it be a kingdom, a senate, or a republic. As it does not mingle itself with the interests of this world, nor assume to itself any civil or coercive power, so it can make no head against the governors of the country; for its power is of another kind, and reaches but to one single society of Christians: Nor are they combined by any law of Christ, in such united multitudes, under one common visible head, as to make themselves dangerous to any state. Whatsoever hath been done in the world by men professing Christianity, in a way of resistance to lawful governors, or rebellions against them, hath never been done by them as churches of Christ, formed upon the model I have laid down.

III. This form of a christian church allows to all its members the most perfect liberty of men and Christians. It is inconsistent with persecution for conscience sake; for it leaves all civil rewards and perferments, penalties and punishments, to kingdoms, and states, and the governors of this world. It pretends to no power over conscience, to compel men to obedience; no prisons, no axes, fire, nor sword. It gives its ministers power and authority to command nothing, but what is found in the Bible: All other things must be determined by the consent of the people, who are supposed to be led by common prudence, by the necessary reason of things, and by a vote of the major part of the society. But if in any of these things, particular persons, after all proper inquiries, cannot agree with the major part, they may make their remonstrances, and be dismissed, if they cannot continue there with tolerable satisfaction; or they may withdraw to another congregation, if they are aggrieved, and the society refuse to dismiss them.

I confess, those Christians who differ from the major part of the congregation should seriously examine themselves, whether their disagreement doth not arise from any pique, or prejudice, or worldly interest, or humour, or obstinate self-will; and, in some particulars, they should deny themselves, rather than divide themselves, from a society whose communion they have long enjoyed: More especially, they should take heed of this in the country, where they have not conveniency of holding communion with other Christian societies. And even where they have such opportunities and conveniencies, persons should not indulge a fickle humour, nor run wandering about from place to place, and fluttering from one church to another, upon every little difference. But after all, it must be acknowledged, there may be several just and reasonable grounds for particular Christians to separate from a society, from which they differ in some sentiments or transactions, though they still continue to acknowledge them to be a true church of Christ. Such a liberty as this must be still maintained; for christian churches must have all voluntary members, and not be turned into prisons.

If any person sins so grossly against the plain rules of the gospel, or the laws of God or Christ, as to appear to renounce the characters of a Christian, the church hath power only to renounce such a person, and disclaim all christian fellowship with him, and turn him into the world, which is the kingdom of Satan, till he repent: But they have no authority to hurt his life or limbs; to touch a hair of his head, nor a penny of his money, by way of punishment.

IV. By such sort of churches as these, Christianity is more easily maintained in single and secret assemblies, if the powers of this world favour them not; for there is no need of large multitudes assembling together for any ordinances of worship, or for discipline; no need of any such public appearances or transactions, as may give any unnecessary umbrage or suspicion to persecuting enemies: There is no need of councils and synods of ministers of distant cities, to meet together to make laws for the church, or to rectify disorders there: Nor is there any need to travel over large counties or dioceses, to fetch a rightful ordination of a minister for any church: Much less to take a journey to Rome, if all the ministers in a nation were dead, or departed from the faith. If the whole society, which was wont to meet together, cannot do it under a persecuting prince, for fear of exposing themselves to public injury, they may assemble in smaller parties, and their preachers may teach, and pray, and administer all ordinances among them, as it was often done in the primitive times, maintaining their christian-fellowship by secret meetings: And they may all be called little churches, in the house. By such single congregations, larger or smaller, was the whole church of Christ in the world continued and increased, the first two or three hundred years, whensoever the powers of this world took it into their heads to persecute and destroy the professors of the christian faith.

Perhaps it may be objected here, Would it not be a much more substantial and powerful way of maintaining christian churches, if these single congregations, by virtue of their ministers or elders, were combined together in some sacred bond of union, that might make a considerable body of people under such heads or leaders, or under one supreme head, who might better defend them against the invasion of their rites by any secular powers or persecuting princes?

To this I answer, that churches of Christ, considered as such, have no secular power in themselves, nor authority to make any efforts against secular powers: But when men become Christians, or members of churches, they do not divest themselves of any secular or civil rights or powers which they had before: And therefore when natural or civil liberties are unjustly and cruelly invaded by any of the men of this world, they by the laws of nature have a just right, as men, to defend themselves; and no ecclesiastical combinations can give them any further right or power than what they have as men: And this belongs to them still, whatsoever religion they profess, whether natural or revealed, whether pagan, mahometan, or christian. A professor of every religion has a right to be protected by the government as long as he maintains his allegiance to the governors, and does no injury to the state. But if governors will not protect him, but will give him up to the fury of persecutors, he has certainly a civil right to defend himself and his friends against all assaults and injuries.

V. Miscarriages in the government or conduct of such a church as I have described, are less dangerous to Christianity; because they affect but one single congregation, they reach but to one society. Those ecclesiastical governments which include vast numbers

and multitudes combined under one or more spiritual heads or rulers, if there be any misrule and confusion brought in among them, it involves multitudes in the mischief of it, and sometimes shakes or destroys whole nations. But if a government which is included within one single congregation be never so much divided by contentions, and fall into the greatest confusions, the mischief is not of so large an extent, nor can it have so fatal and dreadful consequences. If the congregation itself should be actually dissolved by these constitutions, the particular members of it may depart, and join themselves to other congregations within their reach or neighbourhood, who are nearest of their own opinion, and walk with them in a religious and peaceful fellowship, which they could not well do before, because of such different opinions and divided spirits.

VI. Such single societies or churches, so constituted, are most happily suited to maintain and carry on the great purposes and designs of the gospel, for the conversion of sinners, and the edification of true Christians. Of this matter see the learned Doctor Owen's *Inquiry into the Original of Churches*, Chapter VI. Page 119. See also *Sermons at Berry-street*, Sermon XLIX.

Upon the whole, whensoever it shall appear that any other form of a christian church is more happily suited to the edification and peace of Christians, to the preservation of christian liberty, and to secure the spiritual honours which belong to Christ in his churches, and at the same time appears to have more countenance from the New Testament than this, I shall be glad to relinquish this set of sentiments, and with pleasure exchange it for a better. That is certainly the best form of a christian church, whereby truth, peace, and holiness, may be most happily promoted and secured.

SECTION VIII.

OF THE POWER OF CHURCHES TO APPOINT HOLY THINGS OR ACTIONS.

Question. Whether a christian church may not appoint or determine circumstances and ceremonies of worship and order, which are left undetermined in the New Testament, and require them to be observed?

Answer. In the primitive churches there were extraordinary gifts and powers communicated to them: There were apostles, evangelists, and inspired leaders and guides; but since these extraordinary gifts and powers are ceased, reason and Scripture are our only rules. It is upon this foot every christian church, or every single society of Christians, "receiving one another in the Lord," as St. Paul speaks, *Rom.* xvi. 2, that is, agreeing to worship and walk together according to the faith and order of the gospel, when it is furnished with its proper officers, that is, a bishop or bishops, and deacons, is the highest ecclesiastical power that I know of in this world, which has plain evidence and support in the word of God, or the necessary reason of things. Yet I cannot find that either the light of reason or Scripture has given such a church, or its officers, any authority to invent and use, to appoint and command new ceremonies of divine worship in any case: Nor has it a right to impose on the consciences of men any such self-invented modes or circumstances of worship, so as to make them holy things, or to oblige any single Christian to comply therewith.

But to speak a little more particularly to this matter. We must distinguish between

the religious ceremonies of worship, and the mere natural circumstances of the performance of it.

Natural circumstances are such as are necessary, or at least highly expedient, for the performance of acts of worship, considered merely as natural actions, and abstracted from their religious design. Such are time, place, habit, gesture, &c. for no natural action can be put forth but it must be in some time, or in some place, in some posture of body; nor can any transaction in public society be conveniently performed without some sort of garments, without a commodious place and seasonable hours for assembling: These, in their own nature, are properly no parts of worship or religion, but circumstances belonging to those actions considered merely as natural, and as the actions of natural and sociable creatures.

Among these natural circumstances of actions in social worship, some are necessary to be determined one certain way, and others are not so.

The circumstances necessary to be determined one certain way, are the time and place, the language, and something of the manner or order of the religious actions, &c.

Now where these are not determined by God himself, it is granted they must be determined by every worshipping society for themselves; for they must agree what hour to meet together, what place to meet in, what language* shall be used in the worship, whether they shall begin or end the worship with the Lord's-Supper, or with a psalm or song, who shall minister in holy things: Whether there shall be any responses of the congregation to the words of him that officiates in prayer, or whether *amen* shall be pronounced aloud, or whether a silent assent be sufficient. Where God hath not determined these things, I do not find that he hath ever given authority to any person to determine these for other persons, or any society of men to determine them for other societies; but they must be determined by an agreement or vote of every society for itself. As in several of these things there must be a concurrence or agreement, to make any solemn and constant meetings and transactions of a civil society peaceful and useful, regular and orderly, so are the same things needful to be agreed upon in a christian church, to render the worship of every single society practicable and edifying, harmonious, agreeable, and decent.

And since these things are necessary to be determined one way, if some few persons in the society will not consent to the agreement of the major part of them, they must depart, and join themselves to some other society which is more for their conveniency. Such are the various tempers, engagements, sentiments, inclinations, and conveniencies of different persons, that there would be a great bar put upon the frequent meetings of any large society for any civil or religious purposes, if they must not meet and transact any affairs till every single person be perfectly pleased. If therefore the minor part cannot, or will not consent to what the bulk of the society agree upon, here is no imposition upon their consciences, while they are allowed to join themselves with other societies, civil or religious, where these necessary and disputed circumstances are agreed and practised more according to their mind.

The circumstances which are not necessary to be determined one way, are the

* Always excepting those primitive times, when various languages were used as an extraordinary confirmation of the gospel of Christ. But in ordinary seasons of worship the assembly must know and agree beforehand, that it must be performed in a language which they understand.

postures or gestures of the body, the garments of the preacher, or of him that prays, of singers or hearers, &c. and these every person may determine for himself: Some may have a blue garment, while others have red or brown, black or white; some may wear a long coat, others a short one; some may stand in prayer, others kneel if they will; some may choose to stand in singing or preaching, while others may choose to sit in the same society.

I must confess, there seems to be something of a natural decency in the uniformity of some of these circumstances, especially that of gesture, in one and the same congregation, in some particular parts of worship, as standing in prayer, &c. but no such necessity of such an uniformity as to give power to any person or society to determine for every single worshipper, and oblige him to obey.

If any whole church, or a multitude of churches in a nation, will choose to agree in any particular practice, it is well; or if they can persuade every person to consent to the same: But if some persons will presume to determine all these circumstances one way, and will impose them upon their fellow Christians by a pretended authority, they go beyond the bounds that either the light of nature or Scripture allows, and assume such a power over the consciences of men as I cannot find the chapter and verse where it was given them; for these circumstances being left indifferent in themselves, in the nature of things, and in Scripture, they are not necessary to be determined one way for a whole society, and much less should all this society be obliged in conscience to comply with such an imposition.

Having given such an account of the natural circumstances of social worship, let us inquire what are religious ceremonies.

Religious ceremonies are either real actions, or modes and circumstances of action, by which some special honour is designed to be paid to God, and therefore God alone can institute them, who alone can determine what shall be honourable to himself. These have generally a signification of something inward and invisible annexed to them: But whether we can learn what they signify or no, still there is a holiness and a necessity placed in them by the divine appointment; and therefore man cannot appoint them, nor add to them, because he cannot put holiness into any thing, nor make any thing holy or sinful, which God has not made so.

Some of these religious ceremonies are real actions, and entirely divine institutions or sacred appointments of service, which are in no wise necessary to natural actions, nor should ever have been practised, if God had not positively enjoined them: Others in their abstracted nature, antecedent to the divine command, were but mere natural circumstances of action; yet when thus determined, particularly by God, they become as it were parts of our religion, and our worship.

Circumcision, offering of sacrifices, slaying and eating the passover, burning of incense, lighting the lamps, sprinkling of blood, divers washings, the use of the instruments of music in the temple, &c. seem to be of the first sort, *viz.* such real religious actions and ceremonies of pure divine institution, as were by divine appointment imposed upon the ancient church.

Others are of the second sort, among which may be reckoned the places or spots of ground, perhaps where the tabernacle and temple stood, the holy times, such as sabbaths, new moons, and other festivals, the attire or vesture of the priests who

officiate, &c. These were but modes and circumstances of action made necessary to the jewish worshippers, ordained to be holy, and converted into religious ceremonies.

Under the New Testament the ceremonies distinct from natural religion, whether real actions or mere modes and circumstances of action, are few and easy, such as the washing with water in baptism, and eating bread and wine at the Supper of the Lord, to which we may add the observation of the first day of the week, in memory of our risen Saviour.

Any of the circumstances or modes of action which belong to these religious rites, which are not determined by Scripture, and are not necessary to be determined one way in order to social worship, must be left indifferent to every worshipper, according as his conscience or his conveniency shall direct. I know not any text where God has given any man, or set of men, any power to impose on others. See these things happily set forth at large in Doctor Calamy's excellent discourse, called *An Introduction to the Second Part of Moderate Nonconformity;* of which I am informed, that Mr. Locke himself should say upon the perusal of it, that while the Protestant dissenters kept close to these principles, they would sufficiently maintain their ground, and justify their separation from any established national church, if that church should assume an authority to impose things which ought to be left indifferent.

Surely the fourteenth chapter of the Romans lays a foundation for this christian liberty, and forbids to impose on conscience the observation of meats or days, and in general, all impositions of this kind. The apostle, while he handles this subject, had no order to impose or forbid these practices on the Romans, to whom he wrote. He leaves every man to use his own "liberty in the gospel, nor be entangled with any fresh yokes of bondage;" *Gal.* v. i.; supposing always that the light of nature and common reason will keep all sober Christians within the bounds of human decency, common prudence, and civility; and that a preference be given to such modes, and gestures, and seasons, which seem to be patronised by the examples mentioned in Scripture.

The custom also of the holiest and purest churches may have some influence to direct our practice, in such affairs of small importance where we cannot find any other rule of determination, either from the light of nature or Scripture. The apostle Paul seems to give this advice to the Corinthians, in the business of wearing the hair long or short; 1 Cor. xi. 14, 15: For after he had offered some reason on one side, from the mere light of nature and decency, he adds, verse 16, *that if any man seem to be contentious*, that is, be not satisfied with my arguments, and persist in contending about this matter, *we have no such customs, nor the churches of God;* that is, let him be determined by the custom of us the apostles, and of other christian churches; let him not affect a singularity in things of less moment, nor give offence to the generality of the most serious and pious professors of the same faith, in such little things as these are.

But if any man, or any society of men, shall assume so much to themselves, as to pretend a divine authority to confine other churches and Christians to a most exquisite uniformity in every punctilio that relates to religion and circumstances of worship, even in things which God has not appointed, they throw us back again into a sort of judaism, and make and impose new yokes of bondage; they pretend to bind what Christ has made free, and seem to usurp his prerogative: A pretence to such power appears to me to be the very spring and spirit of antichristianism; there is the foundation for papacy

laid, though it has not arisen yet to an universal supremacy, to an infallible chair, and a triple crown. See pages 695—698.

All Christians are bound by the New Testament to worship one God, even God the Father who dwells in heaven, in the name of one Mediator Jesus Christ, by the aids or operations of one Spirit; they are bound to be baptized into these names, and to remember the death of Christ in the holy Supper, to trust in the promises of the gospel, and to practise the precepts of it in an uniform life of holiness. This is evident and certain, and perhaps this may be thought almost sufficient to maintain the unity of the christian church. But still let it be observed, that where Christians are fallen into very different opinions in any important matters of doctrine or duty, or where their sentiments are so extremely divided, and perhaps contrary to each other in matters of worship and order, that they cannot agree and join in the same forms and modes of divine service, or where they have not charity enough to bear with each other's differences in things of less moment, they ought not to force themselves, nor to be forced into one society or church; but they should join themselves to such distinct societies as are nearest of their own mind; for their edification in faith, holiness, and love, is one great and chief end of church fellowship.

Though the men of Israel were bound by law to join three times a year to worship God, who dwelled in the temple or tabernacle, by the appointed sacrifices of the passover, pentecost, &c. yet they were not bound by any law of God to attend that synagogue which was nearest their own dwelling where prayer and praise were performed, and instructions and exhortations given to the people. Herein they had, or they should have had, liberty to choose their fellow worshippers and the synagogue where they would worship, if they had any scruple upon their consciences about the practices of that which was nearest to them. And the same liberty belongs to Christians in every age and nation.

To force all Christians into the same church, whose understandings and opinions point different ways, and to bind them together in an outward form of fellowship with their minds so much divided, is the way to increase their differences, to kindle their fire with more fierceness, and awaken their wrath to a higher degree, till they grow mad against each other and ruin the church. It is like tying Samson's foxes together by the tail with firebrands between them, while their heads stand contrary ways, and then enclosing them all with a strong fence in one field: There they will unavoidably snarl and rage against one another; they will draw different ways, and diffuse their fire and wrath till they have burned up the field, and destroyed a lovely harvest.

THE

TERMS OF CHRISTIAN COMMUNION,

HUMBLY PROPOSED TO THE

CHURCHES OF CHRIST,

WITH

AN ATTEMPT TOWARDS THE SOLUTION OF VARIOUS QUESTIONS AND CASES OF CONSCIENCE, ARISING FROM THIS SUBJECT.

QUESTION I.

WHAT IS CHRISTIAN COMMUNION? AND WHAT ARE THE GENERAL AND AGREED TERMS OF IT?

CHRISTIAN communion, in the sense of Scripture, is that communion or fellowship which Christians have with God the Father, and our Lord Jesus Christ, or with one another; and both are joined together by the apostle John; 1 John i. 3, *That which we have seen and heard declare we unto you, that ye also may have fellowship,* or communion, *with us; and truly our fellowship is with the Father, and with his Son Jesus Christ.*

This communion or fellowship, in the spiritual and invisible part of it, consists in a participation of the favour of God, the spiritual benefits of Christ, and the invisible and everlasting blessings of the gospel. But this is not our present subject of discourse.

The visible fellowship or communion that Christians have with each other, consists chiefly in the "participation of the spiritual ordinances of the gospel, and mutual assistances for the good of each other.

"The special ordinances of the gospel are chiefly these two, baptism and the Lord's-Supper."

Baptism is an ordinance appointed by Christ, for our entrance into the visible church; and when once performed is never to be repeated.

The Lord's-Supper is an ordinance appointed by Christ after we are entered into the church, for the assistance and increase of our faith and hope, our comfort and holiness; and ought to be as often repeated as Christians have proper opportunity: It represents our communion with the Lord Jesus Christ in his death, and the benefits which are derived from it, such as the pardon of sin through his sacrifice of atonement, &c. and it represents also our communion with one another in those benefits, or our joint participation thereof, according to the apostle's description of it, 1 Cor. x. 16, 17, *The cup of blessing which we bless, is it not the communion of the blood of Christ? We are all partakers of that one bread.*

The other parts, privileges, or offices of christian communion, shall be mentioned, when there is need of it, in distinguishing constant and occasional communion.

Now, among all the ordinances of worship, it is in our partaking of these two, *viz.* baptism and the Lord's-Supper, that special christian communion chiefly consists. But when we use the words christian communion, we have most frequently a regard to the Lord's-Supper, because our communion with one another, and joint participation of the blessings of the gospel, is most plainly represented thereby; and by the frequent repetition of it, our christian communion or holy fellowship is maintained in a more explicit and honourable manner.

Having considered briefly the nature of christian communion, we must inquire now into the general terms of it.

As, in order to hold an inward and spiritual communion with Christ and his people, we must be sincere believers, or real Christians; so every person seeking visible communion with the church of Christ should satisfy his own conscience with nothing short of real Christianity: But Christians and churches not being able to search the heart, as Christ and conscience can, the term of our visible communion with Christians is a credible profession of real Christianity, or *a professed subjection to the gospel of Christ*, as the apostle expresses it; 2 *Cor.* ix. 13; that is, such an outward profession of inward and hearty Christianity, as gives just and credible evidence that this profession is sincere, and that the person thus professing is a hearty Christian; *Rom.* x. 9, 10, *If thou shalt confess with thy mouth the Lord Jesus, and shalt believe in thy heart, that God hath raised him from the dead, thou shalt be saved. For with the heart man believeth unto righteousness, and with the mouth confession is made unto salvation.* If a man profess Christianity in any manner or form of profession soever, and yet make it plainly and openly appear, by other parts of his conduct, that his profession is not sincere and hearty, he has no right to salvation according to this text, and has always been deemed unworthy of christian communion in all the scripture history, and in the best and purest ages of the church. Those that *profess they know God, but in works deny him*, are to be counted abominable amongst all Christians, *Tit.* i. 16.

It is not therefore real and inward Christianity in the heart, that can give any man a right to communion in outward ordinances, unless it be professed in a credible manner to the world; nor can the want of such real and inward religion exclude any person from communion while he makes such a credible profession; for God only is the judge of hearts, and not man; we must act according to outward appearances: There will be hypocrites in the church of Christ in this world, and there is no help for it: The wheat and tares will grow together in the same field till the time of harvest; *Matt.* xiii. 30. The day of judgment is the only time to decide the matter completely, and distinguish hypocrites for ever from real Christians; and therefore all that have the credible form and appearance of Christianity, must be admitted into the church of Christ on earth.

This is the common sentiment and practice of all the reformed churches, "that a credible profession is the general term of communion," though they differ about some particular circumstances of this profession that go to make up the credibility of it. These things are so generally acknowledged by the most and best of writers of our day, that I shall not stay here to prove them, and my business in this discourse is with those Christians that allow and acknowledge what I have already said.

Now a credible profession of Christianity implies these two things: First, that the matter professed be of such a nature, and declared in such a manner, as may render the

profession credible; and secondly, there must also be some person or persons to whom that profession must appear credible, and who must be judges of the credibility of it.

I shall begin with the last of these, and dispatch it soon, because I mention it only as a needful introduction to the chief questions relating to the particular terms of christian communion.

QUESTION II.

WHO ARE THE PROPER JUDGES OF THE CREDIBILITY OF OUR PROFESSION?

SECTION 1. Jesus Christ in his word is the supreme Judge of what is truth, and what is duty; what sort of persons ought to be admitted to christian communion, and who should be forbid. But as he is absent from us, and speaks not but by his word, and his word does not apply its own rules to particular persons, John, Thomas, William, &c. in every age and nation, there is a necessity that some persons must judge and determine whether John, Thomas, William, &c. have these characters of worthy communicants, which Christ has appointed in his word.

Every man for himself must use his own best judgment in searching his heart, and trying himself by the word of God, whether he has complied with the terms of salvation, and he must judge for himself too whether it be his duty to propose himself to christian communion: But no man must determine for himself whether he shall be received to communion with others, and partake of their sacreds. No man can impose himself upon a church, merely because he thinks himself qualified: This would lay all the garden of Christ waste again, throw down all the fences, and reduce it to a mere wilderness: This supposition is too wild to be admitted.

If therefore a credible profession of Christianity be the term of communion appointed by Christ in his word, there must be some present and living judges of the credibility of this profession; and I know not who can be so proper to judge as those persons with whom communion is desired. This is not a matter transacted merely between a minister and a single Christian, for the Lord's-Supper is not to be administered but in a community, as 1 Cor. xi. 20, 21, 33, *The church must come together to one place, and they must tarry for one another.* There must be therefore the consent of the community or society, to admit a person to share in and partake of the sacred things in communion with them. This ordinance of Christ represents the communion of his members "in one body, by the one bread and one cup;" 1 *Cor.* x. 16, 17. And the duties of church fellowship, to which we then engage ourselves, are mutual duties between a community or society of Christians, therefore there must be a consent on both sides; and as a person must judge concerning the society, whether he will join himself to them, so the society must judge concerning him, whether they think him fit to be received as one of them.

It is into union with that society, that the person proposing himself is to be admitted, either in a constant or occasional way; and they give him the leave and privilege of becoming a partner with them, or a member of their body; and surely the light of nature tells us, that every voluntary society must judge who shall be members of their society, and enjoy fellowship with them in their peculiar privileges.

It must be confessed, indeed, that where this voluntary society professes a subjection to the will and law of any sovereign or superior power, and this sovereign has given them a rule whereby they are bound to admit persons into their society, in this case, their own mere arbitrary will and pleasure cannot violate or neglect this rule without guilt; nor can they appoint any new rules, and make them necessary terms and conditions of such admission: And this is the case of all christian churches. For though they are so many voluntary societies, yet Christ, their common Lord and Sovereign, has appointed the general rule of admitting members into his churches, *viz.* that "all such shall be admitted who make a credible profession of Christianity."

But wheresoever there is such a superior acknowledged rule given to direct in this affair, still the society itself must judge concerning the true sense and just application of this rule to particular cases. It is this society that will suffer reproach, and bear the trouble of it, if a person admitted prove scandalous and unworthy; and it is but reasonable therefore that they should determine whether he be a person fit and worthy to come among them or no; but still according to the rules of Christ, so far as they can understand his meaning. And as this is the voice and language of common reason, so it is also the appointment of Christ in his word; and this was the practice of the primitive times, as I shall shew hereafter.

The society ought surely to have the same liberty which the proposed person has, and if he has liberty to judge whether he should seek communion with them, they ought to have liberty to judge whether they should receive him. Each as a right to judge of the sense and application of the rules of Scripture to direct their own actions.

Now since there can be no regular or proper christian communion held and maintained but in and with a church of Christ, we must inquire into the nature of the christian church, to find out which are the persons in, or of this church, that must judge and declare others fit for communion with it.

SECTION II. The church of Christ is either visible or invisible. The invisible church includes all the real saints that are in heaven or on earth. But our question has not to do with the church in this sense.

The whole visible church of Christ upon earth, consists of all those persons in the world that make a visible and credible profession of the christian religion, however scattered through all nations, and whether joined together by mutual agreement in particular societies, or not. The New Testament sometimes useth the word church in this sense; *Matt.* xvi. 18; 1 *Cor.* xii. 28, and other places; and it is in this sense, when a person is baptized, he is said to be received into the christian church, for hereby he becomes a member of the catholic church visible on earth.

But all this vast scattered multitude can never maintain and perform acts of christian communion together in the Lord's-Supper, which is the other chief ordinance of special communion: Nor indeed can they keep up the public honour of God, a public profession of the name of Christ, nor the duties of public worship, without their being divided into particular societies, which agree at stated times and seasons *to come together to one place*, as the apostle expresses it, for purposes of christian worship; 1 *Cor.* xi. 18, 20, and xiv. 23.

Such, "a society or congregation of persons, both men and women, making a credible profession of Christianity, and united by mutual agreement or consent to meet together usually at the same time and place for the performance of christian worship,"

is a church of Christ; and this is the clearest and plainest notion that I can frame of a particular church of Christ, according to the language of the holy Scripture. Consult the book of *Acts*, consult the sacred Epistles, where the word church is used at least forty or fifty times in this sense.

I will not deny but the word church, even where it does not signify the catholic church, visible or invisible, may in some few places be used for a larger number of Christians than could meet in one place; as the church of Jerusalem, in the very beginning of Christianity, while Christians multiplied faster than they could be well formed into regular distinct societies; yet even in some of those places, perhaps it includes no more than did meet for some special purpose. See *Acts* xi. 22, and xv. 22.

The word church may also in a few other places be used for a smaller collection of Christians, that might occasionally meet, or perhaps dwell together, as "the church in the house of Aquila and Priscilla," 1 *Cor.* xvi. 19; and in the house of Philemon; *Philem.* verse 2.

But the most common acceptation of the word church, where it signifies a visible company of Christians, implies such a number as met usually by common consent in one place for christian communion, in stated and solemn ordinances of worship, and especially the Lord's-Supper, as in the fore-cited texts of the *Epistle to the Corinthians*, and many others.

This is the church that is described in the nineteenth article of the church of England, *viz.* "A congregation of faithful men, in which the pure word of God is preached, and the sacraments be duly ministered, according to Christ's ordinance, in all those things that of necessity are requisite to the same."

Yet let it be noted here, that such a society as this may be properly called a church, when their preachers, ministers, or all their officers are dead, or even before they have any minister, or any officers fixed amongst them; and without doubt they have power to receive any person that desires it, and makes credible profession of Christianity, into their society, having judged his profession credible, and declared him in their judgment fit for christian communion. But it would lead me too far from my present design to insist upon particular proof of these things, which has been often done, and which is now the pretty general opinion of men that are not attached to any particular party, but give themselves leave to think freely, and follow the dictates of reason and revelation.

Section III. The ordinances of the gospel must be administered in a church with decency, and honour, and spiritual advantage: But the whole body of the church cannot thus administer them; therefore it is necessary that these concerns be committed to such persons as are peculiarly fitted for those administrations by knowledge and prudence, and all proper talents; and the church ought to be furnished with such officers, who should be chosen and solemnly set apart, devoted, and ordained to this work. The particular forms of their choice and ordination do not enter into the present argument.

The business of receiving members into the communion of the church, and the forbidding or excluding of them, is a matter of as serious importance as the administration of other christian ordinances; and oftentimes it is attended with great difficulty. A whole assembly of men cannot be supposed to manage this affair altogether with decency and

regularity, and without confusion: Therefore, it is abundantly convenient, if not necessary, to commit the first and special care of these matters also to particular persons, of human and divine knowledge superior to the rest; persons of great skill in the things of God, in serious religion, and in the affairs and tempers of men, qualified with due zeal for the honour and purity of the ordinances and churches of Christ, and filled with great tenderness and compassion to the souls of men; persons of good judgment and discretion, of great meekness, condescension, and charity, that if possible they may not give occasion to the church to exclude any of the sheep of Christ from the visible fold, nor admit unclean animals into the flock.

The chief officers of a particular church, whether they be called bishops, ministers, presbyters, or elders, pastors, guides, leaders, governors, or rulers, &c. are the proper persons to have the first oversight and chief care of this matter; and in our churches, it is committed chiefly to them, to take account of the profession of Christianity made by persons desiring communion, to give some general notices of it to the church, or a more particular narrative where it is desired; and to receive them to communion, either with the explicit and formal vote of all the congregation, or only by their implicit and silent consent.

But if it happen that there is but one minister or presbyter in that church, or if the ministers are young men of small experience in the world, it is usual and proper that some of the eldest, gravest, and wisest members, be deputed by the church to join with and assist the ministers in the care and management of this affair.

Those persons who have been chosen by the church, and have been solemnly devoted by the church, and have also solemnly devoted themselves to that office or service, have been usually called ruling elders. And such officers have been supposed to be described in those words of St. Paul to Timothy, 1 Tim. v. 17, *Let the elders that rule well be counted worthy of double honour;* that is, respect and maintenance; but *especially* if they are also preachers as well as rulers, if *they labour in the word and doctrine.* These are supposed to be called *governments;* 1 Cor. xii. 28, and Rom. xii. 8, *He that ruleth.* But if such persons are but appointed to assist a minister, especially one who is young, and inexperienced in the government of the church, I will never quarrel with any man, whether he will call it a divine order, or merely prudential, since the Scripture has not determined this matter with incontested evidence.

These ministers, officers, and persons so deputed by the church, are therefore the first proper judges of the credibility of any person professing the christian faith, and desiring communion with that church; for these are supposed to be qualified above others with christian knowledge and wisdom, and they are also appointed by the church to the care and conduct thereof.

Yet in this case they are not so absolute and supreme, but that the congregation must some way or other approve of their judgment, either by an explicit vote, or at least by a silent consent, before the proposed communicant is received to the communion of the church; for it is still the consent of the church that must make him a member of it. Or the congregation may for just reasons disallow of their judgment in particular cases; and if they proceed obstinately to mismanage their affairs of this kind, and especially in notorious instances, and make the terms of admission larger or narrower than Christ has appointed, or if they notoriously misapply the right rules of admission or exclusion to

wrong persons, that church or society may reverse their sentence, and act according to their own judgment, and if it be needful, may also call them to an account for it, and assume the judgment, exclusion, and admission of communicants, entirely and immediately into their own hands; till they shall choose other officers, who shall preside in this affair, and exercise this power more agreeably to those sacred rules and terms of communion which that society believes to be the will of Christ in his word.

SECTION IV. This conduct of affairs seems to be founded on the very nature of religious societies, and the common light of reason; and it seems also to be much countenanced by a variety of scriptures in the New Testament, where the directions of the apostle concerning the receiving and excluding of members are addressed to the churches of Christ at Rome, at Corinth, at Thessalonica, &c. I might multiply quotations to this purpose: Rom. xv. 7, *Receive ye one another, as Christ also received us, to the glory of God;* Rom. xvi. 1, 2, *I commend unto you Phebe our sister—that ye receive her in the Lord as becometh saints;* 1 Cor. v. 4, *In the name of our Lord Jesus Christ, when ye are gathered together, and my spirit, with the power of our Lord Jesus Christ to deliver such an one unto Satan, &c.;* verse 7, *Purge ye out therefore the old leaven;* verse 13, *Put away from among yourselves that wicked person;* 2 Thess. iii. 6, *Now we command you, brethren, in the name of our Lord Jesus Christ, that ye withdraw yourselves from every brother that walketh disorderly.*

Though the apostle Paul gives directions to Timothy and Titus about the rejection of heretics, yet it must be noted that these two were extraordinary persons, evangelists divinely commissioned and endowed, and by virtue hereof might act in a superior way in every church whither they were sent; and they were to teach the churches the orders of Christ: Nor does it follow that every ordinary minister has the same power; nor indeed does it appear that Timothy and Titus were to exercise it without the churches' consent. For St. Paul himself, when he gave apostolical orders for excommunicating the incestuous Corinthian, would have done it when the whole church was gathered together, and as an act of that particular community; as in the texts before cited.

Though the seven epistles, in the second and third chapters of the *Revelation*, are inscribed to the angels or ministers of those seven churches, and directions are there given about the casting out false worshippers, and idolaters, yet it is evident that the contents of these epistles are plainly addressed to the whole body of Christians, that made up those several societies or churches, and they were to cast out idolaters, &c. from among them, as an act of the churches by their ministers.

Though ministers and elders are sometimes called guides, and rulers, &c. yet it is never to be understood in so absolute a sense, as to take all power away from the society or congregation, and leave the ministers to tyrannise as they please over the churches, and, like Diotrephes, to admit and exclude whom they will; for which usurpation the apostle John severely censures him; 3 *John* verses 9, 10.

Now when such a mode of admission into churches as I have described, by the ministration of the elders, and the consent of the church, has the light of nature and reason leading us into it, and Scripture gives frequent countenance to it by various rules and examples, it does not fall very short of a sacred institution.

SECTION V. But it will be objected here, "that it may happen that the ministers

may be in the right, and the people in the wrong, in their judgment in particular cases: And must the vote of the people decide such an affair, against the opinion of ministers, elders, or rulers?"

I answer, in the first place,

Answer I. That when any person is proposed to the church, concerning whose admission the minister and people are not agreed, it is much better to persuade that person to seek communion with some other church, rather than occasion strife and debate between the people and the minister. But if that cannot be conveniently, surely it is more adviseable in itself, and more acceptable to God, that any single person should deny himself the benefit of special ordinances, at least for a season, than become a bone of contention, and perhaps a sword of division, in a christian church. A person of a true christian temper would not willingly admit a new member, nor be admitted, to the real offence and grief of any persons that were there before.

I say, in the next place,

Answer II. That if this method of peace cannot obtain, but admission of the persons still pressed and pursued, it is the duty of the minister to endeavour, by all proper arguments, to convince and persuade the people, and lead them to practise what he esteems the mind of Christ in this case, and with much "gentleness to instruct them that oppose themselves;" 2 *Tim.* ii. 25. If this will not do, then he should lay the laws of Christ before the people, with great and awful solemnity, and acquaint them with the terms of communion which Christ has appointed, according to his own best understanding of the gospel: He may charge them, in the name of Christ, to receive or exclude such persons only whom Christ appoints to be received or excluded; and that as they will answer it at the bar of Christ. But if the people persist in their own judgment still, in opposition to the minister, they must be left to answer it to Christ their Judge; for Christ has left no infallible vicegerent here on earth, to govern his churches contrary to their own sense and interpretation of his written word.

It may be proper, on such an occasion, that some friendly methods of private conference should be tried, and the reconciling assistance of other prudent ministers and Christians desired. But if these attempts prove vain and ineffectual, and the difference still remains, there is no power on earth, that I know, which can authoritatively determine any minister to give the sacred ordinances of Christ contrary to his conscience; nor can any power on earth command and constrain a christian church to receive a person to their communion, whom they in their consciences judge unworthy of it; therefore, rather than dwell together in endless contentions, the minister must peacefully resign his office in that church.

And the same rule must be followed in many other cases, wherein a minister and people resolve to disagree, besides in this point of admission to their communion, or exclusion from it. For it is better that the minister should leave himself to the providence of God for further service, than that a church of Christ should be rent in pieces by a minister's resolved continuance amongst them, and making parties and wars in so sacred a society. There is nothing perfect in human affairs on earth, where knowledge and grace are so imperfect. We must not expect complete purity and peace, till we arrive at the blessed communion of the church in heaven: Yet I may venture to affirm, that things would scarce ever arise to this extreme height of difference, if christian

charity and love, humility and mutual condescension, were but more universally taught and practised, and the furious and narrow spirits of men tempered and enlarged, according to the glorious pattern of the apostles of Christ.

SECTION VI. Here will occur another inquiry also; and that is "when the congregation itself is divided in their sentiments, how must any proposed question be determined? Or whether a proposed communicant must be admitted?"

I answer, In all such cases, the light of nature and the common usage of mankind have determined it, that the greater number should carry the question according to their sentiments, and the lesser ought to submit.

But I would take the liberty to give my opinion in point of prudence thus: That though, in questions of less moment, it is proper enough that the major vote should decide the case, yet, in an affair of considerable importance, such as the choice of a minister, or the receiving a member to constant communion, &c. if it were possible, I would obtain an universal concurrence of all the church; for it would be better, if such a thing could be so managed, as that no old member of the church be made uneasy by receiving a new one; much less should a church, that will act with prudence, admit a new member contrary to the sentiments of their minister, or give occasion of grief to him, as I have before hinted. But, surely, I would never determine the affair only by a majority of one or two voices; for this will be in danger of giving so great an uneasiness to a considerable number of the church, though they happen to be the minor part, that oftentimes it will administer occasion for strife, division, and separation.

There is one piece of prudence that we may learn from our greatest enemies, the pope, and the conclave of cardinals; who, in the election of a new pope, never appoint the person but by the vote of two-thirds of the college of cardinals; that in an affair of such importance, there may be no dangerous contention of parties after the person is elected. And I should think this so valuable a rule of prudence in the sacred affairs of the church of Christ, that no matter of moment should ever be determined, unless two-thirds or more of the congregation agree to it. And indeed, if there be a firm opposition made, but by two or three considerable members, against the admission of any new communicant, I would not be hasty to admit the person, but rather persuade him to delay, or to seek communion elsewhere, than endanger the peace of a whole church.

I desire it may be noted here, that I have only delivered my private opinion concerning the distinct power of elders, ministers, and votes of the people, in admission of members to the communion of the church: But whether the power of receiving or excluding be vested entirely in the people or in the minister, or in both together; whether by a majority of votes, or universal consent of a particular church, it equally serves the purpose of my argument in most of the following questions upon this subject.

I put this note only to secure my readers against any prejudice or hasty judgment against the following parts of the book, though they should happen to differ from me in the present question.

QUESTION III.

WHAT ARE THE PARTICULAR TERMS OF CHRISTIAN COMMUNION? OR, WHAT THINGS ARE NECESSARY TO MAKE THE PROFESSION OF CHRISTIANITY CREDIBLE?

SECTION I. HAVING inquired who are the persons that must judge of the credibility of our profession in order to christian communion, we proceed next to inquire, "what things go to make up a credible profession?" And we must take great care in this matter not to make new terms and conditions of our own, which Christ, the Lord and King of his church, has not made; nor to insist upon any thing as necessary to render a profession credible, which may not be fairly deduced from the rules and examples recorded in the New Testament, and the application of them to our present age, according to the different circumstances of times, places, and persons.

It must be granted that there are several parts of necessary conduct in christian churches and ordinances, that arise from the very nature and reason of things, from the very being of societies, and from the circumstances of all human affairs; and we must not expect that all these should be dictated by divine revelation, and written down with all their minute particulars in express words of Scripture. It would be endless for the sacred writers to have attempted it, and most unreasonable for us to expect it: For the light of nature and reason is given us by God himself for our direction, as well as the light of revelation; and whatsoever rules may be drawn by plain reasoning, and by easy and necessary inference from the comparison of scripture times with our own, may and ought to be esteemed a part of our direction in these affairs, as well as the express words of Scripture; for Scripture itself often gives us but very short and imperfect hints of the whole process of civil or ecclesiastical transactions. This shall be more fully made appear, when I come to answer an objection raised from primitive practice.

After a diligent search into the holy Scripture, and careful observation of christian churches and their affairs, these three things appear to me to be necessary, at least in our times, to make a profession of Christianity sufficiently credible for christian communion.

First, A confession of all the necessary articles of christian religion.

Secondly, A professed subjection to all the necessary rules of christian duty.

Thirdly, Such a blameless and holy practice in life, as may make the profession of the lips appear, in the common judgment of men, to be the sincere sense of the heart.

Note, Under the first head, I say, a confession of all the necessary articles of christian religion, rather than the christian faith, that I may plainly include the practical articles of repentance and new obedience, &c. as well as the doctrinal ones.

Reason and revelation, nature and Scripture, seem to make these three things necessary to a credible profession of Christianity.

For if a man makes never so fair an appearance of christian duties in his practice, yet if in words he refuse to profess the christian faith, or deny any necessary doctrine or duty of it, he is not worthy of christian communion.

Or if a man give never so good an account of his knowledge and belief of all the articles of the christian religion, and his moral conversation and carriage towards men has been generally blameless in the eye of the world; yet if he utterly refuse to declare his sincere intention to practise any of the plain or necessary duties of the christian religion, he cannot he accounted worthy of christian communion.

Or if his words make never so full a confession of all the doctrines and duties of Christianity, and profess a sincere belief of, and submission to them, yet if in his constant practice he be a liar, an adulterer, a drunkard, a known cheat, or a robber, &c. his wicked practice makes his profession incredible, he is not worthy of christian communion.

SECTION II. But I would deliver my thoughts more fully on these three particulars that make up the credibility of a profession, and shew what is implied in each of them.

First, A confession of all the necessary articles of christian religion includes in it those articles that are necessary to salvation, and those that are necessary to maintain and practise this communion; which two are certainly different from each other.

Though it has been often said in a charitable way, and with very good reason in general discourse, that "there should be nothing required in order to christian communion which is not necessary to salvation," yet this cannot exclude the knowledge of what christian communion is. The very nature of the thing requires that we should know how to practise this communion, before we can actually practise and enjoy it. Now, as the Lord's-Supper itself is not of absolute necessity to salvation, the things necessary to communicate in the Lord's-Supper must imply something more than merely the things necessary to salvation; as I shall also make plainly appear under the Seventh Question, which will be entirely employed on this first part of christian profession, and therefore I proceed to the second.

SECTION III. *Secondly*, A professed subjection to all the necessary rules of christian duty, includes in it not only those duties that are necessary to salvation, but those duties that are necessary to practise christian communion.

The first sort of christian duties are those that are necessary to salvation, such as the fear, love, and worship of God; faith, love, and obedience towards our Lord Jesus Christ; repentance of sin, and a humble trust or hope in the promises of the gospel, as shall be shewn at large under the Seventh Question. Now this profession does not signify a mere engagement or promise hereafter to fulfil these duties, but also a profession that we have begun to practise them already; for we are not received into a church in order to receive Jesus Christ the Lord, but upon a credible profession that we have received Jesus Christ already; *Rom.* xv. 7, *Receive ye one another, as Christ has received us.* We must have, therefore, some evidence and hope that we have received Christ in all his necessary offices, as our Lord and Saviour, and consequently that he has received us, before we should propose ourselves to be received by any visible church.

Now if a man professes repentance, it implies that he has been made sensible of sin, that he has been taught the evil of it, that he mourns for what is past, and is daily watching against it. If a man profess faith in Christ as a propitiation and atonement,

it implies that he is acquainted with his guilt in the sight of God, that he is in danger of divine wrath, and that he is not able to make atonement for his own sins, and therefore he flies for refuge to Jesus Christ, that he may obtain peace with God. If he professes a hope of heaven, it implies in it, that he is endeavouring to prepare for this heaven; *for every man that hath this hope purifieth himself;* 1 John iii. 3. If he professes to take Christ for his example, it implies a desire and attempt to imitate our blessed Lord in self-denial, patience, zeal, &c.

In order to make this profession of our faith and hope credible, it is the custom of some churches to require no more than the person's own general profession that he does believe, and repent, and hope, as in *Acts* viii. 37, *I believe, &c.* It is the custom of other churches to desire also some further evidences of the truth of his faith, hope, and repentance, by a more particular account of some of those things which are implied in the exercises of those graces; and this has been usually called, though not properly, the *rendering a reason of the hope that is in him;* as 1 *Pet.* iii. 15.

The first of these methods hath considerable advantages towards the enlargement of particular churches; and, so far as I can judge, such churches seem to require all that is absolutely necessary to the nature and being of a church of Christ.

The second has also some valuable advantages towards the well-being of a church, and the purity and profit thereof in the inward and experimental parts of Christianity, though some persons of extreme bashfulness may have been hereby discouraged and hindered from christian communion.

Both of these methods have some advantages, and some inconveniences; and it is not my design at present to decide which of the two has the greatest; but this is certain, that every church must judge for itself how large or how narrow, how general or how particular a profession of Christianity must be, in order to render it credible to themselves; yet let each church take heed that they make not the door of admission larger or straiter than Christ has made it.

The second sort of christian duties are those that are necessary to practise christian communion, especially if constant communion be desired, such as, to meet at the same time, and in the same place with some church of Christ, to perform christian worship with them there, to agree to the general methods of worship, the customs, order, and discipline that are practised in that church, so far as they can find them agreeable to the will of Christ in his word, or so far as they are necessary to maintain the being, order, and peace of all religious societies. This is so much, and so plainly implied in the very nature of communion or fellowship, that it is always supposed to be consented to, even where it is not expressly mentioned; this will appear more evident under the next question.

This profession of consent to the worship or order of that church, does not forbid or prevent any person from attempting to reform any mismanagements in the worship or discipline of the church, by argument and friendly persuasion; but only it restrains him from all tumultuous and irregular proceedings, in order to such reformation; according to the great canon of the apostle, *let all things be done decently, and in order,* 1 Cor. xiv. 40. It is upon this account he forbids the Corinthians *to speak with unknown tongues without interpretation,* to break in upon the public worship, or for *several persons to speak all at once,* &c. and such natural rules of decency as these, may, in some sense, be called the commands of our Lord, *ver.* 37, to which we owe a professed subjection.

But if a man cannot consent to the most constant and essential forms of ministration, worship, and discipline, as practised in that church, it is far better that he should join himself to some other society, whose chief practices and government are more agreeable to his own sentiments.

SECTION IV. The third thing that goes to make up the credibility of our profession, is "such a blameless and holy practice in life, as may make the profession of the lips appear, in the common judgment of men, to be the sincere sense of the heart:" By which we are not to understand a perfection of virtue, or a freedom from every vice: *For there is no man living on earth, that doth good, and sinneth not; in many things we offend all;* and the best of men have reason to complain, *that the evil they would not do,* sometimes prevails over them, and they are *led captive to the law of sin;* Jam. iii. 2. Rom. vii. 19, 20.

But it is necessary that persons professing Christianity should be free from all gross and scandalous sins, nor be guilty of those crimes in their allowed practice, which in many places of Scripture exclude men from the kingdom of heaven; 1 Cor. vi. 9, *Know ye not that the unrighteous shall not inherit the kingdom of God? Be not deceived; neither fornicators, nor idolaters, nor adulterers, nor thieves, nor covetous, nor drunkards, nor revilers, nor extortioners, shall inherit the kingdom of God;* 1 Cor. v. 11, *I have written unto you not to keep company, if any man that is called a brother be a fornicator, or covetous, or an idolater, or a railer, or a drunkard, or an extortioner, with such an one, no not to eat:* And if this text forbids us to keep free and sociable converse with such persons, or to sit down at our tables with those who profess Christianity and practise wickedness, much more does it become a church to exclude them from its sacred society and fellowship, and to forbid them to sit down at the table of the Lord. Common railers and slanderers, such as the apostle James describes, are to be shut out from communion; Jam. i. 26, *If any man among you seem to be religious, and bridleth not his tongue, but deceiveth his own heart, this man's religion is vain;* that is, his religious performances are evidently ineffectual for his own salvation; therefore, while he indulges his tongue in a scandalous liberty, his pretences and profession of Christianity are vain and incredible, and consequently he has no right to christian communion. The glory of God who is holy, the honour of our Lord Jesus Christ who is our pattern of holiness, the credit of the gospel which is a doctrine according to godliness, as well as the common sense of mankind, exclude all such persons from societies of strict and pure religion.

In the very first dawning of the gospel, John the Baptist, the forerunner of Christ, forbid the professing Pharisees from baptism, for want of fruits of repentance answerable to their profession; *Matt.* iii. 7, 8. And in following times the Ephesian converts made their faith appear by *confessing* what they believed, *and shewing their deeds;* Acts xix. 18, 19. And if there be not a frequent account of such instances in Scripture, it is because the nature and reason of things render the necessity of it sufficiently evident without many express instances.

The inquiry of a church into the conversation of the person who desires its communion, may be adjusted and regulated under these four heads, *viz.* whether he be sober, just, and good, as well as religious. So much of these four characters as lie within the public observation of the world, are necessary in order to become a member of the church.

1. Whether he be sober and temperate in some good measure; free from the vices of drunkenness, uncleanness, violent wrath, railing, revenge, &c.? For otherwise it is plain he cannot belong to Christ; *they that are Christ's have crucified the flesh with its affections*

and lusts; Gal. v. 24; and the foregoing Scriptures I have cited run much upon this point.

2. Whether he be just and honest among his neighbours, a man of fair dealing, faithful to his word, sincere, and without hypocrisy in the common affairs of life? For if a person be of a designing, tricking, and deceitful temper and carriage among men, how can we trust his profession in the things of God, or receive it as credible? Besides, the unjust are expressly excluded the kingdom of God, 1 *Cor.* vi. 8; *And all liars shall have their part in the burning lake;* Rev. xxi. 8.

3. Whether he be good, kind, charitable. Whether he hath that love to his neighbour which is the fulfilling of the duties of the second table? *Rom.* xiii. 8, 9. Whatsoever we profess of faith, yet without love we are nothing; 1 *Cor.* xiii. 2. And it may be inquired too what love he has to fellow Christians? For it is an appointed mark of the disciples of Christ; John xiii. 35, *Hereby shall all men know ye are my disciples, if ye love one another: If a man say, I love God, and hateth his brother, he is a liar: He that loveth not his brother whom he hath seen, how can he love God whom he has not seen?* 1 John iv. 20. Without love, and particularly to fellow Christians, he can never be fit for such a holy fellowship, which is to be managed all in love, and whereof love is one of the greatest duties.

4. Whether he be religious and godly? Though inward piety is chiefly to be known to men by the profession of the mouth, and the two foregoing general heads in some measure answer this end, yet there should be some appearances of piety also in our conversation in the world, in order to give us a full right to christian communion. In such an inquiry as this, at least it must be found that such a person is not a scoffer at religion, that he does not make a jest of things sacred, that he uses the name of God with reverence in common conversation, that he speaks honourably of Christ, and his gospel, and his ordinances, upon just occasion, and that he frequents some places of religious worship; for we are to look diligently that there be no profane person in our churches, as well as no fornicator; *Heb.* xii. 15.

Thus I have given a particular account of those three things that join to make up the credibility of our profession, in order to be regularly admitted to the communion of a christian church.

SECTION V. *Objection.* But why must there be so many things required to make a profession of Christianity credible in our day, beyond what was required in the primitive times? Then they only confessed Christ to be the Messiah, the Son of God, or that he was raised from the dead, in order to baptism and admission into the church. So it was when many thousands were added to the church in one day; so the eunuch when Philip baptized him, *Acts* viii. 37; so the jailor and Lydia, *Acts* xvi. 15, 35, and many others; or at most, their present works were thought sufficient to confirm their confessions; Acts xix. 18, *Many that believed came, and confessed, and shewed their deeds,* without long inquiries into the whole of their faith, or the course of their conversation.

Answer I. The account that the Scripture gives of these transactions is very short, yet sufficient to inform us that there was more discourse on both sides, in order to the baptizing their converts, than is expressly written down; for even the confessions that Lydia and the jailor made are not written, but it is said in general, *they believed;* therefore we are not to take it for granted there was nothing else required, because the Scripture in those places mentions no more than a word or two of short confession.

Answer II. In several places where such transactions are recorded in Scripture,

there is no mention of their works or conversation at all; and surely no minister or church in our day would imagine, that a mere confession, *that Jesus is the Christ*, without any further inquiry either after knowledge, faith, or works, is sufficient ground for admission to sacred ordinances; for then we must take in almost whole nations. Besides, if a man did make such a profession, "that Christ was the Son of God," and his conversation were blameless to outward appearance; yet who of our ministers, or which of our churches would receive him without some further inquiry into his knowledge of God, and Christ, and the gospel? Therefore it is sufficiently plain, by the acknowledgment and practice of those who make this objection, that they themselves do not think it necessary to confine their inquiries only to such a single sentence of profession as the scripture history expresses, and seek no further.

Answer III. It is sufficiently evident to me, that the fundamental or necessary articles of religion are not the same in all ages and places; but more or less knowledge is necessary, in order to salvation, according to the degrees of divine revelation in several nations or ages. The belief of the crucifixion and resurrection of Christ was not fundamental in Christ's own life-time; for when he spake of his own death, Peter replied, *Far be it from thee, Lord*, Matt. xvi. 22, *this shall not be unto thee:* And the rest of the apostles *knew not* certainly *that Christ should rise from the dead, for some doubted* even after his resurrection; Matt. xxviii. 17. Yet they were the chief of the church of Christ upon earth at that time. So in the very first promulgation of the gospel, before judaism was quite destroyed, the apostles themselves had not so full a knowledge of Christianity as they afterwards, by degrees, received from the instructions of the blessed Spirit. Many passages of Scripture discover this; as *Acts* x. 14—17, and xv. 7—30, and *Gal.* ii. 2—14. At this time there was scarce any thing of the New Testament written; and though the evidences of the christian religion were great, yet the opportunities of a large and extensive knowledge were exceedingly few and small among the common converts, if compared with our age: Therefore the Messiahship of Christ, his death, and resurrection, and exaltation, with a very few alterations from natural or jewish religion, seem to be the chief things then necessary to believe in order to salvation, or to profess in order to communion.

But when, in process of time, the jewish economy was divinely destroyed, Christianity grown to its full perfection, the canon of Scripture completed, and several christian truths and duties more plainly and expressly revealed, it may be well supposed that where this canon of Scripture is freely published, God may require something more of christian knowledge in order to salvation, than in the very first years of the gospel. I speak this last proposition but modestly, and as a probable opinion; but if this be true, then it clearly follows that there are more things necessary to make a profession of Christianity credible at this day in most places of England, than were necessary even in Judea in the first years of Christianity.

Answer IV. If the essentials of any doctrine were perfectly the same in all ages, yet the credibility of its profession is exceeding different, according to different circumstances of time, place, and persons. Where hardships and sufferings attend the professors of any religion, a very slight profession of it will persuade me that a man understands it, and is very sincere in it; because he exposes himself to suffering by this means: But where there is full liberty given, or especially if external advantages attend it, there every one will be ready to profess, though he has little knowledge or sincerity.

Those first times of the gospel were times of reproach and persecution; the sect of Christians was every where spoken against, and death and dangers attended it on all sides. Now to confess the name of Christ, amidst the reproaches of the world, against the opposition of the wise and the foolish, the Jews and the Greeks, the threatening of kings, and the violence of the people, was a more powerful and evident proof of the truth of their faith, than if they had made long speeches, and had the testimony of a continued blameless conversation in a land and age of Christians. Surely that confession, which was sufficient for martyrdom, if their enemies knew it, must be sufficient for communion, when made known to the church. But in our age and nation, where Christianity is the profession of the time and the country, a mere acknowledgment of the name, or death and resurrection of Christ, is not sufficient to prove us knowing or sincere Christians; and there ought to be so much larger a confession, and so many credible circumstances attending it, before we can reasonably, or upon just grounds, believe a man to be a true Christian. All these requirements which I have before mentioned being put together, do not amount to so credible a profession, as for a man to say boldly this one sentence, "I am a Christian," in the face of death and martyrdom.

Answer V. I might add also, in the last place, that a great number of the conversions of the primitive Christians were so sudden and surprising by the extraordinary effusion of the Holy Spirit, that the very miracle of their conversion did sufficiently answer the end of a large and particular confession. The work of God on the souls of men was sometimes in an instant, and they were made believers, out of unbelievers, at once; *the Spirit fell on them while they heard the word;* and when they who just before professed judaism or heathenism, and neither knew nor loved Jesus Christ, confessed his name and his religion at once; the wonderful change was evident to all, and they had no long accounts to give either of their faith or conversion, their knowledge or conversation; nor was it required, because the miracle itself made their profession sufficiently credible. Besides, spiritual gifts were conferred on multitudes in that day as soon as they were converted, and gave sufficient evidence for acceptance unto baptism, as Acts x. 44, 46, 47, *While Peter yet spake these words, the Holy Ghost fell on all them which heard the word. For they heard them speak with tongues and magnify God. Then answered Peter, can any man forbid water, that these should not be baptized, which have received the Holy Ghost, as well as we?*

He that well considers all these things, and sets the affairs of the primitive times in a due light, and thus compares them with our own, will see plainly that something more is necessary to make a profession of Christianity credible in our day, than was needful in the first age of the church. And yet still we may be said to follow the rules and examples of Scripture, while we require nothing more in order to communion than what is necessary to make our profession credible; for so much of this has been always required even in scripture times, and the word of God, and the very nature of things seem to demand it.

QUESTION IV.

WHAT IS A CHURCH COVENANT? AND WHETHER IT BE NECESSARY TO CHRISTIAN COMMUNION?

BESIDES the things that have been already mentioned, as included in a credible profession of Christianity, it is worth our inquiry, whether any solemn covenant be needful in order to communion. Now to answer this question, we must distinguish between that communion which is fixed and constant in one church, or that which is only occasional.

By fixed, constant, and complete communion, I mean the joining myself to a particular church, so as to become a complete member of that religious society, engaging to perform, at appointed times and places, my most usual public worship with that society rather than with others, to assist in all services necessary to support that society, and partake of all privileges of it for mutual edification and comfort, and to maintain the public honour of Christ in the world.

By occasional communion, I understand a mere participation of the general and special ordinances of the gospel with a particular church for a time, under the general character and claim of Christianity, and so far as occasions of providence may make it convenient and desirable. But not to become properly a member of that particular society, nor be interested in the affairs, regulation, or management of it.

Now for this occasional communion, there is no necessity that every such communicant should enter solemnly into a covenant or agreement with that particular church, any farther than only to partake of those special ordinances for a season in a decent and regular way. It is sufficient for this sort of communion, that a person make such a credible profession of Christianity as has been before described, or that he be recommended by some other church, or the elders thereof, before whom he has made such a credible profession: Or that it be some way ascertained to the church whose communion he desires, that he has done it.

But where fixed and complete fellowship with a particular society is desired, the very nature of things seems to require it, that there should be such a mutual agreement among the persons that intend to practise this constant communion. This is part of the second thing requisite to make our profession credible, *viz.* a professed subjection to all the necessary duties of Christianity, as will plainly appear by what follows:

A church is composed of such persons as agree to worship and walk together in all the ordinances of Christ, *viz.* to attend on the ministry or preaching of the word, on praying to God together, on speaking or singing the praises of God, and celebrating all the institutions of Christ, especially that great one, the Supper of the Lord, which is called communion.

They devote themselves first to the Lord in public by their profession, as they have done before in secret; covenanting to walk with him in all his ordinances; then they give up themselves to one another, and they *receive one another in the Lord*, which is the word used most frequently in the New Testament for admission into the communion of saints, or being solemnly acknowledged as fellow Christians, and consequently as having a right to special ordinances. They profess their agreement or consent to worship

usually together, to attend usually on the ordinances of communion, as administered in that church, and to fulfil all necessary duties of christian fellowship in a special manner towards one another, for mutual edification, as far as God shall instruct and enable them: And this is called the church covenant, which is in truth nothing else but a voluntary solemn agreement with some particular society, to practise those social duties of the christian religion, among them at appointed times and places, which Christ himself has required in general to be practised somewhere when opportunity is found.

Such a consent or agreement to meet at stated times and places for social worship, is not indeed formally instituted in the New Testament: But there are several passages in the New Testament which very plainly suppose it, as will appear immediately. And the reason why it was not delivered in the form of the gospel institution, is this, because it is a principle of natural religion; the light of reason teaches it, and upon this account it was not set down as an institution under the Old Testament, though doubtless the patriarchs and holy men of old practised it, ever since there was any such thing as public worship set up in the world: So the Israelites met and read the Scripture, and prayed in their synagogues without the formality of a particular divine institution; wherever a synagogue was built, the neighbouring inhabitants by consent weekly worshipped there.

I confess, where magistrates take upon them to impose a religion upon the people, and national and parochial churches are appointed by some assuming powers, this free covenant or agreement degenerates into a constrained consent; but such a free and explicit agreement is more necessary among those Christians who are left to their own liberty, or who dissent from a national and established church.

This covenant has indeed been much censured both by the profane world, and by some fellow Christians: And it must be confessed, that some few ministers and churches of rigid and narrow principles, have heretofore given too just an occasion of censure, by drawing up their particular church covenants in a long form of writing, and inserting several things into them, that were by no means necessary to common Christianity, and such as savoured too much of a party-spirit; but churches and ministers in our age, better understand christian liberty, and true principles of charity. I know of none of these impositions in our day; and if our present practice in this matter be censured by any, I am persuaded it is merely for want of understanding it: For if it be fairly represented, as I have described it, it appears to be a piece of mere natural religion and social worship, and is so far from being an addition to the rules of the gospel, or an imposition on the consciences of Christians, that no voluntary religious society can possibly subsist without some such covenant. When any person therefore joins himself to, and becomes a member of a christian church, this covenant or mutual agreement is always implied where it is not expressed; and those that have been so weak as to ridicule the forms of it, yet are so wise as to practise the substance of it.

Indeed the mere necessity and reason of the thing is so plain and convincing, that one would wonder that any man should speak against it, if he will but give himself leave to consider the following particulars:

1. How can there be a receiving of each other in the Lord, at the first forming of a church, if there be not a mutual agreement, or giving up themselves to each other, to worship the Lord together? Christians are commanded to do it, *that with one mind and one mouth they may glorify God;* Rom. xv. 6, 7. And how can any particular member

afterward be received to communion, if there be not such a society or church to receive him, and to which he may give up himself to walk with them in the Lord?

2. How can there be any social worship performed, if there be no agreement to worship together in the same place, and at the same time? If all the Christians must always be at perfect liberty to worship where they will, and communicate every Lord's-day at a different place, a minister may sometimes be left to preach to the seats and walls, if none are bound to attend on his ministrations: And on the other hand, surely the minister may take as much liberty as the people; and he may absent himself and worship elsewhere, when they are all gathered together and wait for a sermon. Thus many assemblies for worship may be without a teacher, and many teachers without an assembly, and some small assemblies have many teachers.

3. How can there be any provision made of a proper place of worship for a whole assembly, or any conveniencies or decencies that are requisite for sacred actions, without such an agreement? How can a table be appointed or furnished with bread and wine, and vessels to contain them, fit to distribute the Lord's-Supper, unless several persons have agreed upon it?

4. How can the ministers be maintained if there be no societies agreeing to attend on their ministry, and support and encourage it? Yet this is a duty incumbent on all those who are ministered unto; *Gal.* vi. 6; 1 *Cor.* ix. 13, 14. Each society is bound by the rules of the gospel, to maintain and honour their own ministers, *who labour among them in word and doctrine;* 1 Tim. v. 17, and 1 Thess. v. 12, 13.

5. How can the poor of Christ be fed and clothed, if Christians are not distributed into distinct societies, and each take care of their own poor? *Eph.* iv. 28. To whom should the poor Christians have applied of old, if not to their own societies? For single persons cannot, nor are they bound wholly to maintain them. They must therefore be distributed into distinct societies, that every poor Christian may know where to apply for relief; and that each of the richer may know also to whom they should give their constant alms, and look upon themselves in a special manner bound to supply. If all the poor saints in a nation were straggling abroad, and belonged to no christian society, how should the richer persons, or richer societies, know these are God's poor, and *of the household of faith,* whom they are bound in a special manner to take care of, *Gal.* vi. 10, unless they have made a profession to some church of Christ, and are known by this means?

So great is the necessity of these things to be done by particular societies, that christian princes and governors, in order to have these things regularly performed, have thrown all their dominions into the form of distinct parishes, or single congregations; though they have had not much regard to any rules in the New Testament, in establishing their church worship and discipline in other parts of it.

6. How can the ordinances of censure and excommunication be ever administered, if there be no societies agreeing to walk and worship together? If any person be charged with a fault or heinous crime, he will reply, "he belongs not to any society who shall assume a right to deal with him and censure him?" And it is impossible that the whole visible church of Christ can meet together, or take cognizance of such particular causes, and give censures, unless we set up a pope, or council, or conclave of cardinals, to do all this, and constrain all particular churches to submit to their sovereign and universal dictates.

There must be therefore an agreement between a company of professing Christians, giving up themselves to one another, and receiving each other in the Lord, in order to maintain the church of Christ in the world, his gospel, or his honour; to support his poor, or his ministers, or the purity of his church, or of any holy ordinance. Receive therefore the apostle's exhortation, Rom. xv. 6. 7, *That ye may with one mind and one mouth glorify God, even the Father of our Lord Jesus Christ—receive ye one another as Christ also received us, to the glory of God.*

QUESTION V.

WHEN A PERSON IS ONCE JOINED TO A PARTICULAR CHURCH, WHETHER HE MAY NEVER WORSHIP WITH OTHER CHURCHES OCCASIONALLY, OR CHANGE HIS FIXED COMMUNION TO ANOTHER CHURCH?

I ANSWER, That this agreement of worshipping together is not so strictly to be understood, as if none of these persons should ever worship any where else; for there are various occasions in the course of life, that may lead the members of one church now and then to worship with another. Since we all hold the same faith and worship, in the essentials of it, we are to esteem ourselves in general communion with the whole visible church of Christ; and sometimes we join in worship with others, merely to testify our charity and christian fellowship with those that in the circumstantials of religion differ from us; sometimes to accompany a particular friend; to hear a particular minister; to attend on some special occasion of prayer, or preaching; on such occasions, we may very reasonably worship with various assemblies: Or perhaps we may be called to travel from home, and to spend many seasons of worship absent from our own particular community, and then we join with those churches where providence may cast us.

When Christians travel where they are unknown, or make any considerable stay in distant places, they should carry with them a letter of recommendation from the officers or members of their own church, to any churches of Christ, where they may come; such are the letters that St. Paul speaks of, 2 Cor. iii. 1, *Do we need letters of commendation to you, or from you?* And thus he himself recommends Christians to distant churches, as Rom. xvi. 1, 2, *I commend unto you Phebe, our sister, who is a servant of the church at Cenchrea, that ye receive her in the Lord as becometh saints;* that is, that ye receive her to the participation of Christian ordinances, as well as assist her in any civil affairs.

This agreement, or church covenant, therefore, only obliges persons, as far as they can with tolerable conveniency of affairs and spiritual edification, to make that church, of which they are members, the usual place of their worship, and especially their participation of the Lord's-Supper, whereby special communion is maintained.

The question concerning the changing of our fixed communion from one church to another, may be thus determined.

All church-fellowship is appointed for the public honour of God, for our mutual assistance and edification in spiritual things, and for the support of the interest and kingdom of Christ among men. Whensoever therefore any member cannot attain these ends in the particular church he belongs to, after solemn consideration and prayer to God for counsel, he may desire a dismission to some other church, and upon these

reasons the church ought to give it. A brother, or a sister, is not in bondage in such cases; and the pastoral office, and all church power, is *for edification, and not for destruction*, as St. Paul speaks, 2 Cor. xiii. 10.

Now this necessity of changing our communion may happen several ways: As when a person removes his habitation to such a distance, as that he cannot conveniently attend and perform the duties of church-fellowship in that society; or when the church falls into pernicious errors and heresies; or when upon any other account his own edification in that church is not to be attained; or when other necessary circumstances of life, or religion, make his union to another church of much more importance. But in these cases let the conscience of a man be well informed, and let him duly consider all circumstances before he puts this in practice: For it argues a light and changeable temper, to be running always from one church to another, and unbecoming the spirit of the gospel. Yet where the reasons of removing this communion from one church to another are just and good, and after due application to the church, if they refuse to dismiss him, he may fairly depart without it, and join himself to any other church that is satisfied in his credible profession of Christianity.

QUESTION VI.

WHETHER FIXED COMMUNION WITH SOME PARTICULAR CHURCH BE A NECESSARY DUTY? AND WHETHER ANY MAY BE ADMITTED TO OCCASIONAL COMMUNION, WHO ARE NO FIXED MEMBERS OF ANY CHURCH?

IT is a natural inquiry, flowing from the former question, whether any person is at liberty to content himself merely with occasional communion, sometimes with one church and sometimes with another, without becoming a fixed member of any church at all? Or whether a church may forbid a person occasional communion, who refuses utterly to join in any fixed communion?

The duties of holy fellowship for the glory of God, and mutual edification, which are most regularly practised in a state of fixed communion, are so many and so plain in Scripture, and in the reason of things, that very few persons can be exempted from them: For those duties are such as these, to attend on public ministrations together, to pray and confer together about spiritual things, with a sort of holy intimacy or friendship, to encourage and support the ministry, to maintain the poor, to uphold the public worship of God by assisting in the provision of a place, and all other external things necessary for public worship, to receive members into the church, to censure, and reprove, and cast out scandalous members, to watch over one another in their holy conversation, &c. to admonish and to receive admonitions.

I grant that so many of these duties as can be conveniently performed toward all fellow Christians, should never be omitted where providence gives just occasion; but since each Christian cannot watch over all others, worship with all others, assist toward the maintenance of all the poor, nor all the ministers, &c. those with whom he agrees to worship in a stated way, are the persons to whom he is most immediately called to fulfil these kind offices, and has fairer opportunities to do it. And, as I have shewn before, that public worship could never be certainly, regularly, and comfortably

maintained without such a fixed communion, and every person that refuses such services to Christ and the church, must have very plain and constraining reasons to excuse his neglect.

Besides, the privileges of fixed fellowship are, or should be, alluring and encouraging; such as, their opportunities of serving Christ in his public interest in the world, supporting his name among men, their vote in choosing ministers or officers of the church, and their interest in the prayers, cares, and watchfulness of the church for them, and over them; their special right to the spiritual assistance of the ministers and elders of that church in private counsels, admonitions, and prayers with them and for them; their own temporal support, assistance, and relief, by the church, if they fall into poverty, &c.

It is my opinion that scarce any person can be justly exempted, or excused, from fixed communion somewhere, but those who by reason of their different opinions, unhappy temper, or some special circumstances of life, are under some sort of incapacity of fulfilling several of those duties, and yet by their credible profession appear worthy to partake of the special ordinances of the church.

And if there be any person to be found in such circumstances, I should think it is only such as these: 1. One that has no fixed abode, but his business of life is at all uncertainties, and calls him perpetually to change his residence: Such were the apostles and evangelists, and the itinerant preachers of the first century, together with their attendants, who seem to be settled members of no particular church. Or 2. Such an one that differs exceedingly in his sentiments in some important doctrines, or practical points of religion, from all the churches of Christ near him, and yet may be supposed to hold all the necessary articles of the christian faith, but may not be so fit to assist as a member in the affairs of a church of so different opinions. Or, lastly, There may be such a person as may give some credible evidences of true piety in his heart, but his natural temper is so violent, his spirit so various and inconstant, that he can scarce confine himself to the settled orders of any community, but will be more likely to divide a congregation than to edify it in love.

Perhaps it may be lawful and proper, nay, I add further, perhaps it is a necessary duty at some seasons, and upon very good evidence of their Christianity, to receive such sort of persons as these to occasional communion, though they have no fixed relation to any particular church; and the general rules of Christianity will oblige them to perform several relative duties towards their fellow Christians, and to help to support the external charges of those churches, with whom for a season they hold fellowhip.

But after all, I must confess that the special duties, which belong to a fixed settled communion of Christians, are so generally plain in Scripture, and so necessary from the very nature of religious societies, as described under the Fourth Question, that in my opinion, any church of Christ has reason to make very careful inquiry into the real Christianity of a person who desires occasional communion only, but utterly refuses all manner of fixed communion with any church where he has proper opportunity; unless his habitation be always unsettled, or his circumstances very peculiar, or he can give some other just reason of his refusal to the church.

I should also add in this place, that if persons should be freely and readily indulged and tolerated in this sort of loose communion, because they may have some sort of

appearance of reason for it, others that have much less reason, or none at all, might probably demand and expect it: And these examples would tend greatly to the dissolution and confusion of churches: In such a case, though it may be barely *lawful*, yet it seems not to be *expedient*, and therefore should not be commonly practised, since it leads to the ruin of churches, rather than to their edification; 1 *Cor.* x. 23, except in cases extraordinary.

Another very obvious question arises here, *viz.* Whether a church, or religious society, may refuse a person who offers himself to become a fixed member of that church in constant and complete communion, and makes a visible and credible profession of his faith? Whether a church can lawfully forbid such a person to become a complete member, and restrain him only to a sort of occasional or incomplete communion?

Answer. Though it is certain that without such fixed societies or churches, public Christianity could not be well maintained, and therefore far the greatest part of Christians are certainly obliged to become members of some particular christian society; yet as there may be some peculiar cases which may excuse a person from fixed communion and membership, so there may be peculiar cases also which may excuse a church from receiving some persons to complete membership with them, though they may admit them to occasional communion.

Let it be considered, that by admitting a person to fixed communion, and making him a member of that particular society, he not only acquires a right to join with the society in all the ordinances of the gospel and special communion, in public on the Lord's-days, but he hath a right to be with them at any more private meetings of the whole church, and to consult and act in their special affairs: He has a right to attend on such meetings for considering of the circumstances and state of the church, for regulating things that are amiss, for altering any of their customs, for distributing monies to the poor, for choosing a pastor or other officers, for admitting members, and for exercising the discipline of the church, &c. He acquires also a right in joint-partnership to the temporal possessions of the society, suppose it be a meeting-house for public worship, vessels of plate for church communion, or any houses or temporal goods or donatives, which may belong to that particular society.

Now though the laws of Christ require us to receive every visible Christian, who desires it, to communion in public worship, and in special ordinances of the gospel, because he is fit for it; yet those laws do not require that every such person should be admitted to the peculiar councils and affairs of any particular society, because perhaps he is really unfit for it. Perhaps they know, or have abundant reason to believe, that his different opinions, or his unhappy temper, or his peculiar circumstances, would render him a very troublesome member of it, that he would raise parties in the choice of officers, or in admission of members, or in distributing to the poor, or in the regulation of other church affairs; and therefore they allow him only occasional communion with them, which is all that seems to be his duty with regard to that particular church, and which is all the duty which the laws of reason, or of religion, seem to demand of them toward him.

Besides, let it be further considered, that whatsoever instances of christian fellowship in sacred things the laws of Christ may demand for such a person, yet it is certain the laws of Christ do not demand for him any share in the temporal possessions of that religious society, nor in the distribution of their temporal things, unless it be perhaps to relieve

him in some degree, if he be necessitous. Therefore the laws of Christ do not require that society to receive such a person to complete communion and membership, to introduce him into their councils and affairs, or to vest him in any of their temporal possessions, since it is evident he will become a very troublesome member, and endanger, if not destroy the edification and peace of the particular society or church. *Let all things be done to edification;* 1 Cor. xiv. 26. *Follow those things which make for peace, and things whereby one may edify another;* Rom. xiv. 19.

QUESTION VII.

WHAT KNOWLEDGE IS NECESSARY FOR CHRISTIAN COMMUNION?

SECTION I. Under the Third Question I have shewn that the knowledge necessary to communion, includes in it both a knowledge of what is necessary to salvation, and a knowledge of what is further necessary to maintain and enjoy this holy communion: The very nature of things requires this.

First, Let us consider the things necessary to salvation. How many articles of the Christian faith, or practice, are necessary to our salvation; or in other words, how many fundamentals are there, is not expressly determined in any part of the Scripture. It is a question that has troubled the christian churches almost two hundred years, ever since the reformation began, but has never yet been decided to the common satisfaction even of those that held the Scripture to be the only and perfect rule of faith and practice. Therefore, as every man must judge for himself, concerning the fundamentals of Christianity, in order to examine his own heart, and evidence to himself his hopes of salvation; so every particular church must judge for itself, which are the fundamentals, or necessary articles of Christianity, to examine those that propose themselves to communion, and evidence their right to it.

I grant this, that in determining the nature or number of necessary articles, the churches of Christ ought to govern their sentiments by the rules of Scripture, as near as they can find them by comparing one place with another, and form their judgment in this matter by a large and extensive charity. A general love to mankind, the dutiful imitation of God our Saviour, and the exemplary practice of the blessed apostles, oblige us to make as few articles necessary as is consistent with the great ends of the christian religion, and to impose nothing more upon the consciences of men in this respect than we solemnly believe our Lord Jesus Christ himself imposes in his word, as we will answer it at the great day of his appearance. Yet it is certain, and without controversy, that there are several articles, both of doctrine and duty, of such importance, that a man cannot be a true Christian without them, nor have any just hope of christian salvation, according to the gospel; and consequently, without the acknowledgment of the articles, a person may lawfully be refused communion.

Here let me lay down this preliminary: That the fundamentals of religion, as I have proved before, are very different in different ages and nations, according to the different degrees of revelation, and different advantages for knowing the truth: But ever since the time that the canon of Scripture was finished, and where this canon is published

and acknowledged, we may say in general, and with regard to the church communion, that the fundamentals of Christianity are the same to this day; especially in such places of Great Britain, Ireland, &c. where persons enjoy so great degrees of advantage for obtaining Christian knowledge. What gracious allowances for want of capacity, or for want of means, in dark corners of England, or in India, God will make hereafter, is not my business to inquire into; but certainly, we are to admit none to Christian communion who have not the knowledge that is essential to Christianity. And though we cannot precisely reckon up the certain number of essential or fundamental articles, yet we may lay down such characters of them, as may assist and regulate the affairs of Christian communion.

SECTION II. We may begin therefore with negatives, and may boldly say, those cannot be fundamentals, either of faith or practice, which are not very clearly revealed, either in express words, or in very plain, easy, and obvious consequences; they must be such as the meanest Christian may be able to find by reading his Bible, with sincere desire of truth, with holy diligence, and with humble prayer: For *the way of holiness* and salvation is so plain, that *fools shall not err therein;* Isaiah xxxv. 8; which may be explained by that text, 1 Cor. i. 26, 27, *Not many wise are called, but the foolish things of this world*, &c.

Those again cannot be fundamental which are only to be found in such verses of Scripture, the authority whereof may have been any ways dubious or reasonably suspected. For fundamentals must have the strongest authority, as well as the plainest evidence, and that for the same reason. Upon this account, I would never call that a fundamental, which is not mentioned but in one single text of Scripture; for it is possible, that such a single text might be contested by critics, or transcribed false, by the neglect or iniquity of men, or be falsely translated, either by ignorance or design. Fundamentals must be revealed in several parts of the Bible, and appear to be the frequent design and subject of the holy writers; that so the faith and salvation of plain Christians might be secured against the danger of fatal mistakes, and the subtilty of critics, or cunning deceivers.

Such articles also can never be fundamental, as have no necessary influence on the honour of God, the good of our neighbour, or our own holiness and final salvation; for since the honour of God, and the good of men, is the very end of the gospel, that can never be an essential part of it, without which, these ends may be happily and gloriously attained.

SECTION III. The plain and positive characters of true fundamental articles in christian religion, seem to be such as these:

1. Those without which there can be no religion: Such as, that there is a God; that this God is to be worshipped, believed, and obeyed; that he governs man in this life in order to a final judgment; that there is a future state; and rewards and punishments hereafter, according to our different behaviours here.

2. Those also seem to be essential, necessary, and fundamental articles of the Christian religion, which are the chief points that raise it above natural, or distinguish it from the jewish religion, and which are represented in Scripture as the very foundation and substance, the mystery and glory, of the gospel. Such are these:

"That all mankind are sinners; are destitute of holiness and happiness; and sinful man cannot recover himself to the favour and image of God; and there is no way of

access to God for him but by a Mediator." John xiv. 6, *No man cometh to the Father but by Me:* And I take this doctrine of the necessity and use of a Mediator, to be the groundwork of the difference between natural and revealed religion.

"That this Mediator is the Son of God dwelling in flesh; or, that the Son of God has taken upon him human nature for this very end, to become a Mediator." This seems to be properly the *great mystery of the gospel*, and it should be acknowledged *without controversy*, that *God was manifest in the flesh;* 1 Tim. iii. 16.

"That Jesus of Nazareth is this glorious Person, this only Mediator." *There is one God, and one Mediator between God and men, the Man Christ Jesus;* 1 Tim. ii. 5. *If ye believe not that I am He, ye shall die in your sins;* John viii. 24.

"That in order to the salvation of man, Christ is appointed by the Father to instruct us, as a teacher or prophet; to make an atonement for our sins, and to intercede for us as a priest; and to give us laws, and rule and judge us as our Lord and King:" For he has given us most frequent, plain, and express notices in his word, that this is the way whereby he saves us; and if we know not so much as this of the method of his salvation, how can we apply to him for it, or receive it at his hands with any degree of faith?

"That the Lord Jesus Christ is to be believed, trusted in, received, and submitted to, under these several characters which he sustains, by all that would partake of this salvation:" For if he be absolutely rejected in either of these his offices, we have no reason to expect him to fulfil any part of his salvation to us, or in us. "If we *refuse him that speaketh from heaven* as our prophet, we cannot escape;" *Heb.* xii. 25. If we utterly reject his proper sacrifice as a priest, *there remaineth no more sacrifice for sins, but a certain fearful looking for of judgment, and fiery indignation;* Heb. x. 26, 27. And if we refuse this *man* as a king *to reign over us*, we shall be slain before his face; *Luke* xix. 27. He will take *vengeance on them that obey not his gospel;* 2 Thess. i. 8.

"That God forgives repenting sinners, and is reconciled to them, not for the merit of their repentances, but for the sake of what Jesus Christ had done and suffered." This is a very evident consequent from the former doctrines, and has a plain and necessary connection with them. It seems to be the very substance of the gospel, that we are *justified* or *saved*, not by our own *works*, but *by the grace of God* abounding to sinners, *through the redemption* which our Lord Jesus Christ hath obtained; and that Jesus Christ *redeemed us from the curse*, by bearing *that curse for us;* and that God is at peace with us for his sake; that the gospel is *the word of reconciliation; that God was in Christ reconciling* sinners *to himself;* because *he that knew no sin was made sin*, or a sin-offering, *for us, that we*, who are sinners, *might be made righteous*, and accepted of God *through him;* 2 *Cor.* v. 18—21. See *Rom.* iii. 20—25; *Ephes.* ii. 8, 9, and many other places.

"That though we cannot obtain the favour of God and eternal life by the merit of our own good works, yet faith in Christ, repentance of all sin, and holiness of heart and life, are necessary, in order to our enjoyment of the final salvation." The Scripture is most express and positive in such sort of articles: *He that believeth not shall be damned;* Mark xvi. 16; *Except ye repent ye shall perish;* Luke xiii. 3, 5; *and without holiness no man shall see the Lord;* Heb. xii. 14. Now by this article we are bound to resist all temptations, to strive against and subdue all sinful appetites and inclinations,

and to practise all known duties of fear, faith, love, and worship, towards God; and justice, faithfulness, and kindness, toward men.

"That the Holy Spirit of God is appointed and given to bless men with wisdom and spiritual understanding, to assist them to accept of this salvation of Christ, to sanctify them here, and fit them for the full enjoyment of it hereafter: For since the canon of Scripture is completed, there is a number of such express attestations therein, to the enlightening and sanctifying operations of the Holy Spirit, that he who utterly and in all senses denies them, seems to deny that there is any thing for the blessed Spirit to do amongst men, since the day of miracles was ended. Now since the gift of the Spirit is one of the most glorious and promised blessings of the gospel, a considerable part of the gospel seems to me to consist in the operations of the Holy Spirit; and in this sense, he that denies the Holy Spirit, seems to refuse a glorious part of the appointed salvation.

Let it be considered also, that we are baptized into "the name of the Father, Son, and Holy Spirit:" And is it not necessary that we should have some general knowledge and idea who this Father, Son, and Spirit are, and what is their distinct concern and business in matters of our salvation, together with their divine all-sufficiency to perform it?

The Ephesians, who had never heard of a Holy Ghost, and were baptized only in the baptism of John, might be true believers without this knowledge; *Acts* xix. 2, 3. But since we have had such abundant discoveries of him, and are baptized into his name, the case is much altered. How can we accept adult baptism, or confirm that which we passed through in infancy, at our coming into a church, if we know nothing of the Holy Spirit, nor the use of him in our religion?

It might also be added, as a further argument on this head, that *the communion of the Holy Ghost* is the great gospel benediction, joined with the *love of God, and the grace of our Lord Jesus Christ;* as in 2 *Cor.* xiii. 14. So that our initiation into Christianity being solemnized in the name of "Father, Son, and Holy Spirit," our christian life and state being maintained by their distinct offices or transactions therein, and our hope of happiness depending on their divine benediction, we may reasonably infer, that some knowledge and faith of the blessed Trinity are necessary to christian salvation.

"That there shall be a resurrection of the body, is another such article; *for if the dead rise not, then is not Christ risen; and if Christ be not risen, your faith is vain, ye are yet in your sins:*" 1 Cor. xv. 16, 17. However this might be doubted by some Corinthians before this Epistle was written, yet it cannot safely be doubted now.

"That there is a state of happiness hereafter prepared for saints, where Jesus Christ is;" *John* xiv. 3; and those that "refuse his gospel *shall be punished from the presence of the Lord with everlasting destruction;*" 2 Thess. i. 9. These seem to be necessary motives to work upon our hope and fear, and without which the gospel could hardly be supposed to be received amongst men; and therefore I count them necessary and fundamental articles of Christianity.

Thus I have attempted to give some instances of such doctrines as seem to be necessary to a christian profession, according to the second character of fundamentals; *viz.* "such as raise it above natural religion, and distinguish it from judaism,

&c. and are represented in Scripture as the foundation, the substance, and the glory of the gospel."

3. A third character, by which several fundamentals may be known, is this: "Those doctrines or duties that are expressly made necessary to salvation in the word of God, are certainly fundamentals:" Though the greatest part of these are such as are either necessary to all religion under the first head, or are some of the most distinguishing doctrines of the christian religion under the second head; as, *He that cometh to God must believe that he is, and that he is a rewarder of them that diligently seek him;* Heb. xi. 6. That Jesus Christ is the only way to the Father; John xiv. 6, *No man cometh to the Father but by me.* That Jesus is the Christ: *Who is a liar, but he that denieth that Jesus is the Christ? He is antichrist, that denieth the Father and the Son: Whosoever denieth the Son, the same hath not the Father;* 1 John ii. 22, 23.

The duties of believing in Christ, mortification of the sins of the flesh, and perseverance in faith and holiness, I esteem fundamental and necessary duties; because the Scripture expressly saith, *He that believeth not shall be damned;* Mark xvi. 16. *If ye live after the flesh, ye shall die;* Rom. viii. 13. *If any man draw back, my soul shall have no pleasure in him;* Heb. x. 38. And for the same reason this error, that justification is to be attained by the works of the law, seems to be an heresy, or fundamental error; because the Scripture saith, *Christ is become of none effect to you, whosoever of you will be justified by the law; ye are fallen from grace;* Gal. v. 4. By which we are to understand such a hope of justification by the law, as made the sacrifice and atonement of Christ needless; and which was most probably the sense of the heretics in that day.

Section IV. But here I desire my readers to take notice of these five things:

Note first, That I have by no means pretended to reckon up all the fundamental articles, or give a full or regular catalogue of them: There may be some which I have omitted, and some which I have mentioned twice, and that are included in each other. I have only laid down some general tokens or marks, whereby necessary truths and duties may be known, so far as the terms of christian communion are concerned therein.

Note second, I have here joined several doctrinal and practical articles together, supposing that all those duties which the Scripture makes necessary to be practised, are necessary also to be known in order to practice.

Note third, I call these articles fundamental; and it is my opinion they may be insisted on as necessary to communion, because they seem to me necessary to true Christianity, in such an age and land of light as ours is. Yet, what I hinted before, I repeat now, that, as I will not judge all the heathen world, and condemn them for want of christian knowledge, so neither will I utterly condemn every poor soul in the obscurest corners of a christian nation, for want of such degrees of knowledge as to me seem necessary to salvation, to all that know and read the New Testament. I grant that God, in his word, does not seem to give encouragement to their hope of heaven, nor allow their communion with Christians on earth: But the final condemnation of them is alone with him. And after all that we can say, every person must judge for himself, which articles are necessary in order to his own salvation; and every church must judge for itself, to regulate its own communion; and God alone is a superior judge with regard to the one or the other.

Note fourth, I do not think every one of these articles necessary to be expressly insisted on, and professed by every communicant; but so many only as the church shall think necessary, in order to give them a reasonable satisfaction that he knows and believes the rest.

Note fifth, Though I esteem it necessary that every communicant make known his belief in such articles as the church judges fundamental and necessary some way or other, yet I am far from confining him to any proposed human forms of expression; as I shall shew under the next question.

SECTION V. I proceed now to the second sort of knowledge that is necessary to christian communion; and that is, a "knowledge of all those things that are necessarily implied in the enjoyment or practice of this communion;" or, in short, thus: We must know what communion is, and how to communicate, before we can practise this duty.

This sort of knowledge includes these particulars:

1. If I should say it is necessary to be baptized before we communicate at the Lord's-table, I should have far the greatest part of Christians on my side; and if baptism be necessary, it is necessary also to know the nature of baptism, the end and design of baptism, the meaning of being baptized in the name of the Father, Son, and Spirit, and the manner of performing it, whether it must be done by dipping or sprinkling, or whether both be not lawful, and whether baptism in infancy be sufficient?

2. It is necessary also, that a person should know what is the nature of the Lord's-Supper; that it is to be performed by breaking of bread, and distributing that and the wine amongst a christian assembly; that the bread and wine are both to be blessed, and what is the nature of that blessing; what the bread and wine represent; what is the design of breaking and distributing them; who are the persons that must do this: And a woman must know, whether women are to be admitted to the Lord's-Supper.

3. That several persons, who make a credible profession of Christianity, must agree to meet together for christian worship, at the same time, and in the same place, in order to celebrate this ordinance; and that it is not to be received alone, because it is an ordinance of communion.

Without the knowledge of these things, I do not see how any person can communicate in the sacred and special ordinances of the gospel in an orderly manner, or with spiritual profit.

Thus have I endeavoured to open the way for persons to form their judgment upon this difficult and important question, what are those "articles of the Christian religion, the knowledge of which is necessary to communion;" and I hope I have kept the middle way between a libertinism of principles, and a narrow uncharitable spirit: Wherein if I have failed, I shall be glad to be set right in a spirit of meekness.

QUESTION VIII.

IN WHAT WORDS AND EXPRESSIONS MUST OUR FAITH BE PROFESSED, IN ORDER TO COMMUNION? AND IN WHAT MANNER MUST WE PROFESS IT?

SECTION I. This has been a famous and notable question in all ages of the church. National churches, synods, assemblies, or councils of bishops, presbyters, and learned

men, have established certain sets of fundamental articles and express forms of confession; and by these forms persons are to be tried, that desire admission to their communion. Others, who have thought this yoke and burden imposed upon the conscience too heavy and intolerable, have maintained, that no forms of confession are necessary, besides the very words of Scripture; and that he who agrees to these words has a right to christian communion, though perhaps he may understand or explain them in a sense never so different from the church, whose communion he desires.

Now to speak my own sentiment with freedom here, I think these are two extremes; and the best medium that I can find for all the purposes of peace and truth, is, that every man should confess his faith in his own words, which I shall endeavour to make evident by a particular review of each method.

I grant, that it seems a very natural and plausible argument, that since God has written down all needful christian truths and duties in the holy Scripture, we can choose no better words to confess them in, than those which God himself has given us for our instruction in those truths and duties: But if we consider the affairs of the christian world, the experience of mankind, the practice of heretics and deceivers, as well as the reason of things, we shall find that, though the words of Scripture are sufficient to teach us all the necessary parts of Christianity, yet the mere repetition of them, or subscription to them, cannot give sufficient proof, that the person so professing, has any understanding of them; or has any true christian knowledge. An ideot, or an idle boy, may learn twenty of the noblest and most comprehensive sentences of Scripture without book; a very ignorant person, or a man of most erroneous and destructive principles, may repeat any words of Scripture, and profess to believe them, while the one has a quite contrary meaning under those words, and the others have no meaning at all. Now surely such sort of professions can never be counted a sufficient evidence of christian knowledge, and consequently can never give him a right to the holy communion.

But because this point is of great importance, I shall debate it at large as a distinct question by itself.

SECTION II. It will be replied then immediately, "If the words of Scripture are not a sufficient test in this case, may not confessions of faith, drawn up by wise and good men, be made a test of christian knowledge?"

I answer, No, by no means; and that for these three reasons: It will admit such as ought not to be admitted; it will exclude such as ought not to be excluded; and it will endanger or infringe christian liberty.

Reason I. This may admit such persons as ought not to be admitted; for such forms of doctrine, drawn up by other men, will be liable to the same inconveniencies that will attend any scriptural form of words: A child, or an ideot, may learn and repeat them by heart; a very ignorant person, or one who is very erroneous, may profess and subscribe them in his own sense: For when such forms have continued some time in the world, men of very heretical notions and tempers, being in danger of being excluded from the church by such a test, will contrive and find how to put some perverse sense upon the words, and thus evade the force, and disappoint the design of them, as they have done in all ages with the words of Scripture.

Reason II. This may exclude such persons as ought not to be excluded: For if a person of a truly christian spirit, and of a pious and unblemished character, should happen to differ from this form of human articles but in one sentence, or even in one

word, he cannot honestly assent to, nor subscribe the whole form, though he is perfectly of the same mind in all things, except in that minute point; and yet for this little inconsiderable difference, he must be excluded the communion of the church, and perhaps be liable to all the immediate inconveniencies of such an exclusion, as much as if he denied every article.

There are no synods, or councils of christian bishops or presbyters, even though the laity have been mingled with them, but have put into their articles and confessions some little party notions, as well as the great and necessary truths of the gospel. They have ever had an itch to determine some questions about meats, and days, and circumstances, and ceremonies, either in faith or worship, as well as the most undoubted and fundamental points of Christianity. Mint, and anise, and cummin, have been ever creeping into confessions of faith among the weightier matters of faith and love. Now if subscribing to a whole set of articles be the test of communion, then for not eating flesh or herbs, or for want of the anise and the cummin, a man is excluded the church as much as if he wanted faith and love; which is a most unreasonable thing, and would directly contradict that great canon of the apostle; Rom. xiv. 1, *Him that is weak in the faith receive ye, but not to doubtful disputations.*

Reason III. It will endanger or infringe christian liberty. The imposition of human forms of profession has been a heavy burden and sore bondage, under which most parts of the christian church have groaned in almost every age. It has been a sore temptation to many thousands to strain and subdue those words to new significations, to various and very foreign senses, in order to bend their consciences to a compliance with them; and it has oftentimes been made a hateful engine and instrument of quarrels and schisms, of reproaches and sharp persecutions to many sincere and honest souls, that could not warp their sincerity, nor subdue their consciences to such a compliance. Whence arises the severity of the inquisition in Spain and Portugal, and the compliances of the Jews there, to profess the Roman faith? It is true, no human method is perfectly free from all inconveniencies, yet I would not willingly encourage such a method which has often had such mischievous and impious effects, and has always such danger attending it.

Yet I am very much of the mind that articles of religion, confessions, catechisms, and short summaries of the christian faith, are very useful and necessary amongst the churches of Christ, for several reasons; and particularly,

1. "To give a short and compendious view of the chief and most necessary points of the christian religion, which lie scattered up and down in many distant places of Scripture:" And for this reason, such books are very profitable for all christian families, to teach the young and the ignorant the sum and substance of what they must believe and practise in order to salvation; for though every thing necessary be plainly contained in the word of God, yet persons that have little time, and little knowledge, and very weak reason, would be at a great loss to collect all their faith and duty from so large a book as the Bible is, without some teacher. They would want some instructor, who might lay these things together in an easy method, or some systems, confessions, or catechisms, wherein it is done already. Though these catechisms and confessions should be examined by the word of God, so far as every person is capable, and should be no farther received than they bear a conformity thereto by all that are capable of such examination.

2. Such articles, or summaries of the christian religion, are useful " to hold forth to the world what are in general the sentiments of such a particular church or churches:" And this is proper on many accounts, so it is of use in order to make the way to their communion evident and easy, and that other Christians may know whether they agree with them in what is essential to Christianity, and may judge whether they should seek or desire constant or occasional communion with them; and that other churches may judge whether they should admit their members to communion: This also may tend to encourage more zealous and hearty consultations, and mutual assistances towards the support of their common Christianity, provided that these articles are drawn up with judgment; and these things are managed with prudence and charity.

Such are, or should be, the articles of the church of England, which proclaim her doctrine and discipline to the world: Such are, or should be, the Westminster assembly's confession of faith, or that of the Savoy, and the two catechisms, which shew the faith and worship of the English dissenters: Such are, or should be, the confessions of the foreign reformed churches; of all which it may be said, in general, they are very good summaries of the christian religion, however they may differ in lesser points and circumstances. All these have been of unspeakable advantage in the churches of Christ, not only to train up children and families in the knowledge of divine truths, but to hold forth to all the world upon what foundations the protestant churches are built, and to declare what their faith is, and what their practice.

I would not be understood, as though I thought such confessions of faith necessary to be drawn up and kept in all churches for these ends; for many of the primitive churches, for a hundred years or more, managed their affairs without such formal confessions, at least without any so large ones, generally approved and delivered down to posterity. The constant preaching and praying in the churches, and mutual communication of Christians, did notify to their fellow Christians and fellow churches, their consent in the most necessary and important articles of faith and worship. But it is certain, that since churches are more multiplied, and errors more abundantly increased, there are many expedients that attend such a declared and public consent, or harmony of several churches, in the same general points of doctrine and duty.

I grant, that there have been some great inconveniencies attending these national confessions and articles, such as the nailing down certain degrees of reformation to everlasting imperfection, and the settling some mistakes for whole nations and future ages; we in Great Britain need not run far to seek for instances of this, whether we dwell in the north or south part of it.

But these inconveniencies may be avoided, if we and our fathers had but observed two things: 1. That such articles need not be drawn up in the strictest terms of any particular party, but with allowance of some just degrees of latitude for different sentiments; nor let such articles descend into a determination of too many particulars in things that are of little moment in Christianity; and 2. I would have it always secured, that this precise form of words be never imposed on any person whatsoever as a test of Christianity, of communion, of ordination, &c. to be subscribed or acknowledged by assent or consent; at least it ought never to be done without the allowance of such limitations, explications, and exceptions which might secure the consciences of pious Christians from all unnecessary bonds and fetters.

SECTION III. The only way therefore, that I know of, to secure the just christian

liberty, both of churches and persons, is this, That every person who proposes himself to communion must confess his faith in his own words; or by an open and friendly conference with the ministers, officers, or deputed persons of the church, he must give them satisfaction in what sense he understands the holy Scriptures, in momentous and fundamental points; and make it appear that he knows and believes all the necessary articles of Christianity: And, as I said before, they must take heed not to make more articles necessary than Christ has done by the rule of his word, and they should acknowledge themselves satisfied with such a profession, as may be sufficient to manifest a person to be a good Christian, without descending into nice particularities of opinion, and points of less importance. Whether persons of divided sentiments in lesser matters should be received to fixed, or to occasional communion only, shall be discussed afterward.

Where there is any just ground of suspicion that a person holds such errors, as in the opinion of the church are exceeding dangerous, if not damnable, there surely the church has a right to require that he declare himself free from those errors, and give his sense of Scripture in opposition to them, so far as to give satisfaction to the church: But he is not bound to do it in any form of words proposed to him, or imposed upon him by others: But only in words of his own choosing; because the design of their inquiry, and of his confession, is to profess his own sense of Scripture, or his own faith, and not theirs: And the church must afterward judge, whether the declared sense of the proposed communicant, or candidate, agree with their sense, sufficient for communion in the special ordinances of the gospel.

Hereby the truth and extent of a man's own knowledge is much better found out, than by any form of words whatsoever, human or divine, that can be proposed to him for assent or subscription. Hereby the liberty of the person desiring communion is secured from impositions, in that he is not confined to any set of words, but has the whole range of his mother-tongue to tell what he believes, and to express his own sense of Scripture. Hereby the church also has its full liberty of judging the character and profession of the person admitted to their communion, whether he believe the words of Scripture in such a sense, as the church thinks necessary to salvation, and sufficient for practising and enjoying this sacred fellowship.

This is the way to deal with others, as we would think it reasonable others should deal with us, according to the rule of our blessed Saviour. This is acting according to the professed protestant principle, not to impose on the conscience of others, but to let every one judge for himself concerning his own personal actions, and let the church judge for itself concerning its social actions.

Thus, by the influence of the blessed Spirit, which is a Spirit of truth and peace, Christians may walk together by this rule, to the glory of God and their own edification; and peace and truth may be honourably maintained, so far as we are capable in this imperfect state.

Section IV. An inquiry may arise here, "Whether a confession of faith in writing may not serve the same purposes, as well as a conference?"

It is my judgment that no confessions of faith, delivered in writing, can be sufficient to give evidence of christian knowledge, except there has been some personal conference before or after the writing of this confession, whereby it may appear that the person well understands what he has written; or at least, unless there be some other very evident

and convincing proofs that the person who writes it is truly sincere, and would not dare to impose upon a church, by any written confession, that which is not the real belief and sense both of head and heart.

And by this means that scandal and reproach will be taken away from the churches, of receiving members merely upon a written confession of faith and hope, which perhaps was drawn up by some other hand, and which has neither been the work of the head nor heart of the person who desires communion.

QUESTION IX.

WHERE THE SECLUSION FROM CHRISTIAN COMMUNION CARRIES TEMPORAL INCONVENIENCIES WITH IT, HATH A PARTICULAR CHURCH THE POWER TO SECLUDE A PERSON MERELY FOR WANT OF ORTHODOXY?

SECTION I. Since I have put the test of knowledge sufficient for christian communion upon the final judgment of the church, and their satisfaction in the orthodoxy of a communicant, it is necessary I should answer this great objection, *viz.* Suppose a socinian, a professed pelagian, or an antinomian of the grossest kind, should declare that he has been very sincere in searching the Scriptures to find the truth, should he be secluded from communion, because he doth not appear in his confession orthodox enough to satisfy the church? And is it not somewhat like persecution, when, being rejected by the church, he shall lie under some reproach, and sustain temporal damage in his reputation among his neighbours?

Answer I. It is certain that persons who give not just evidence of true Christianity, ought not to be received to the special ordinances of christian worship, and enjoy christian communion: Now those who believe not the necessary, fundamental, and essential doctrines of the christian religion, cannot properly be called true Christians, whatsoever general profession they make of believing the Bible, or being the disciples of Christ: Therefore such are not to be received.

A man may profess to be very sincere in searching the Scriptures to find out truth; but of real inward sincerity, as well as inward Christianity, God only is the judge; and how valuable a qualification soever sincerity may be, if it could be found in any persons in England, who are not true Christians, and how far soever it may go towards acceptance with God in the secret of his mercy, yet it is not the profession of sincerity, but of Christianity, that gives a person right to the fellowship of a christian church: For God in his revealed word has not bid us receive all that are sincere, but all that believe, or have received Christ, or all that profess to be true Christians. And in this case I know no judge on earth superior to the church, with which communion is desired, and the officers thereof. These must determine whether the profession of Christianity be credible, or no, as I have proved before under the Second Question.

Answer II. Those temporal inconveniencies that a man may happen to sustain among his neighbours, by being excluded from a particular church for want of true faith, are no part of that church's act in refusing him, nor a necessary consequent thereof; but only a mere occasional or accidental inconvenience, to which all human affairs are subject in this imperfect state. Now this is evident, because in a heathen nation the rejection of a

person from a christian church for want of such faith would be honourable, and his neighbours would like him the better for it; though it happens in a christian nation that his neighbours may reproach him; but still this event is no part of the church's act, who ought to love him as a man, and do all due offices of kindness to him, even while they cannot receive him as a true Christian.

Answer III. Though we are not to do the least hurt to any person because he doth not hold the christian faith, yet we are allowed and encouraged to love good Christians better than those that are not so: We are commanded to "love our enemies, and do good to them that hate us," *Matt.* v. 44; but we are told, *Matt.* x. 41, 42, "that he that doth the least benefit to a prophet or disciple, as such, shall have a peculiar reward." We are in a special manner required to *love the brotherhood*, 1 Pet. ii. 17; *to love one another*, John xv. 12, 17; and to *do good to all, but especially to the household of faith*, Gal. vi. 10. Nor can the withholding that degree of love from an heathen, which belongs to a pious Christian, be justly called persecution or hardship, any more than my neighbour may complain that I persecute him, because I do not love him so well as my brother or my father.

Give me leave to add in this place, that though the temporal inconvenience of shame or disreputation is not the necessary consequent of an exclusion from a church for want of faith, yet these inconveniencies may certainly and justly attend the exclusion of a person for want of good morals. And St. Paul plainly intimates it, 1 *Cor.* v. 9, 10, 11, where he permits them to keep *company with* heathen *fornicators, extortioners, or idolaters*, and to eat with them if they are invited, *chap.* x. *verse* 27. But he forbids them to allow the same degree of civility to a *fornicator, extortioner, or idolater* who calls himself *a brother* or a Christian; *with such a one*, he says, we should keep no company, not so much as *to eat* with him. So in 2 *Thess.* iii. 6, 11, 14, concerning *disorderly* Christians and *busy-bodies*, that will not work to maintain themselves, the apostle says, *withdraw yourselves from every* such *brother*, which may signify a withdrawment from spiritual or from civil communion with him, or perhaps include both. He forbids the Thessalonians to have any *company with him, that he may be ashamed;* 2 Thess. iii. 14; and the reason seems to be this: These practices are justly accounted shameful by the light of nature, and among the heathens; now when a man professes so holy a religion as Christianity is, and yet practises these shameful vices, he is guilty of a double crime, and aggravates his iniquity; he is a hypocrite and a deceiver as well as a vicious man, and the apostle exhorts the church to make him know and feel the shame of it.

SECTION II. Another objection, akin to the former, seems naturally to rise here, and to want an answer too, *viz.* Suppose a man to be a real and hearty Christian, holding all the necessary articles of the christian faith, and he proposes himself to communion with a church of narrow and uncharitable principles, who make more fundamentals than Christ has made, shall such a man be excluded from communion, merely for want of orthodoxy in the judgment of an unskilful church?

Answer. Without doubt it is a criminal thing in any assembly, or church of Christ, to imagine and create new fundamentals, and impose them upon others, or to establish narrow and uncharitable rules of communion; yet it is possible that such a church may act in the sincerity of their hearts, for the honour of Christ, and the purity of his ordinances; many such churches there have been in our age, and more in the age of our

fathers; and though it be faulty in them to exclude true Christians, yet they must still be the visible judges of the fitness of persons for their own visible communion, and they are accountable for their conduct only to Christ, their supreme Lord and Judge.

It is better, in my opinion, therefore, that a person who is a real Christian, should join himself to some other distant church, though it may be with some inconvenience; or perhaps it may be better that he should live without ordinances of special communion, which are not absolutely necessary to salvation, than that he should break the settled peace of a church, which walks with God in faith, and holiness, and comfort, though their principles of communion may be a little too narrow and uncharitable, and not to be vindicated. No man ought to come into a voluntary society, and become a member thereof, without the consent of the society, though perhaps they unjustly refuse to give their consent. They must answer it to Christ, their Judge, at the great day. There is nothing in this world perfectly free from all inconveniencies; prudence and Christianity ever direct us, of two evils, to choose the least.

QUESTION X.

WHETHER A PROFESSION TO BELIEVE THE EXPRESS WORDS OF SCRIPTURE, WITHOUT ANY EXPLICATION, BE AN EVIDENCE OF KNOWLEDGE SUFFICIENT FOR CHRISTIAN COMMUNION?

SECTION I. Though what I have already said under the former questions, might be sufficient to answer the present inquiry, yet since in several ages of the church, and especially in times of rising error, this controversy has been moved, I shall spend some time in sifting it thoroughly, and endeavour to lead my reader to such a determination of it, as may give a just satisfaction to an honest and humble inquirer.

By the express words of Scripture, I here intend the words expressed in our English Bible; or the original Greek and Hebrew words translated into some other English words; for it is evident, that the Greek and Hebrew can be of no use to admit plain Christians into English churches.

When I say without any explication, I mean, without explaining the sense of those scriptural words so translated, by other words or phrases; also without any manner of influence or consequence drawn from those words, though it lie never so plain and open. Without explication signifies, where the person proposing himself to communion assents to the words of Scripture, but refuses to explain in what sense he understands those words; and neither will own nor deny any other articles or propositions that may be offered him as terms of communion, though deduced from the words of Scripture with never so much evidence; nor will confess his faith, even in the most important and necessary points, in any other words but those of his Bible.

When I mention knowledge sufficient for christian communion, it is not to be understood as if knowledge were the only thing necessary; for in order to christian communion, there is also required a professed subjection to all the known duties of Christianity, and a conversation answerable to this profession: But the present inquiry is, whether the express words of Scripture are a sufficient test of that knowledge, which is one requisite to communion.

Now let the question be proposed in the fullest and fairest manner, thus: "Whether a

person's professing to believe the English Bible itself, or subscribing, assenting to, or repeating any form of words expressly taken out of any English translation, without any manner of explication or inference, can be an evidence of christian knowledge, sufficient to demand admission to the Lord's-Supper with a christian church in England?"

Those that assert the affirmative in this question, are of two sorts; either persons that have entertained some sentiments in the important points of Christianity different from the common faith of the churches, and would shelter those opinions under the express words of Scripture, though they explain them in their own sense; or they are persons that heartily maintain the common faith, but through an unlimited excess of charity are afraid of narrowing the terms of christian communion, lest they should exclude some sincere Christians out of the church; they are jealous of losing their christian liberty, and are afraid of having conscience oppressed by an imposition of any confessions of faith, or articles of communion, drawn up in the words of fallible men.

Those that hold the negative in this question are also of two sorts; either such as have a narrow and uncharitable spirit, and refuse their communion to all Christians that will not assent, consent, or subscribe to every word and expression contained in their articles, confessions, and human forms; or they are such as maintain a just and reasonable charity towards all that they can hope to be sincere Christians, and dare not exclude any persons duly qualified from the holy communion: They would also secure christian liberty in the full extent that Christ has given it to his people; but they are zealous *for the faith once delivered to the saints*, for the purity of the gospel, for the honour of Christ in his churches, and the true profit and pleasure of christian communion in holy ordinances; nor would they willingly indulge such an excessive complaisance instead of charity, and such a licentious freedom of opinions in their community, as would tend to the destruction of all that is valuable in the communion of the churches of Christ.

I must confess myself at present to stand on the negative side, and I hope I may rank myself among the latter sort of them. I cannot yet persuade myself that a mere assent to the words of Scripture, without any explication, is a sufficient rule by which churches should judge of their communicants' knowledge; and the reasons that influence and constrain me to be of this mind, I shall lay down at large in the following sections; yet I shall endeavour to shew in the end of my discourse, how a just liberty may be secured, both to single Christians and to churches, and the sacred bonds of charity maintained, without a licentious indulgence of all sort of heresies and errors in the same church.

SECTION II. The first argument against the confinement of churches to express words of Scripture, in judging of the knowledge of their communicants, is this, "That the greatest and best end that has ever been aimed at in this method, can never be attained by it." The greatest and best design of it is to secure Christians from all imposition of human forms, and from making confessions of faith drawn up in the words of fallible men, a test of knowledge in the things of God: But this method is no effectual security; for since the inspired words of Greek and Hebrew can be no test of knowledge in English churches, a confession must be made in words of English: Now all English words, into which the Scripture is, or may be translated, are the words of fallible men; and no person can be infallibly sure, in some difficult and controverted texts, that they do fully and truly express the sense of the sacred originals.

I grant here, that for private Christians to search their English Bibles, and find the matters of their salvation, there is abundantly sufficient certainty of the truth of every

translation in general, that it clearly declares all that is of such importance: Because whatsoever is necessary to salvation, is sufficiently contained and revealed, not in one or two, but in various texts of Scripture, though perhaps not always in express words; and in most of these texts learned men generally agree about the mere translation of them: This need create no manner of scruple to sincere and humble Christians, in their own knowledge, faith, and practice. The English Bible is gloriously sufficient for the salvation of every humble Christian in England. The English gospel has saved many thousands, without any skill or knowledge of other languages.

But in this controverted case, when men assert that a confession of express words of Scripture shall be sufficient to purge any man from the charge of heresy, or give him a right to demand christian communion, even where his opinions are justly suspected, I must take notice here that some of these controverted and difficult texts may naturally come into question; such as those which seem to favour any heresies, and those which seem to guard against them. Now in such a case as this, the mere translating of the words oftentimes determines the sense of them; the translation of such a text is a sort of interpretation of the meaning of it; and then what translation of any particular text shall be the standard of orthodoxy for all our churches? Shall that which is public and established by the magistrate have this honour? But who gave it this authority over all the churches? Man or God? Shall any private translation of learned and pious men, met in council, determine the sense for all communions? But whence had they this power? Much less can the translation of any single person be a public standard.

Wandering over all nations and churches, and surveying all the various pretences to such a power, I cannot find where to fix the sole of my foot, but on the only protestant principle, *viz.* "That as each person, with regard to his own conduct in sacred things, must judge of the sense of Scripture for himself, using the best helps of translators and expositors that he can obtain; so each community, using the same helps, must judge for themselves of the sense of the word of God, with regard to their conduct in admitting persons to partake of sacred ordinances among them." Therefore that particular church whose communion is desired, must determine whether any human words, in which a person's faith is confessed, are orthodox in their sense, or no? Whether they do truly answer the end of such a confession, or no; and include the necessary articles of the christian faith? And whether they give sufficient evidence of a man's knowledge in Christianity, in order to admit him to their communion?

Suppose a modern socinian, or a more orthodox man, should refuse the common English translation of the first chapter of St. John's gospel, and confess his faith in words of his own translation thus: "In the beginning was reason, and reason was with God, and reason was God:" Suppose an athanasian refuses the English translation of *Rev.* iii. 14, where Christ is called *the beginning of the creation of God*, and says ἀρχὴ ought to be translated "the head of God's creation," lest Christ be represented as a creature, and he will put this text into his confession of faith. Suppose an arian, an antinomian, an anthropomorphite, a pelagian, a calvinist, each confess their faith in the words of Scripture, of their own translation; none of these English words are, in the strictest and properest sense, the words of God, but the words of fallible men; and the particular church whose communion is sought, must necessarily interpose with their own sense of Scripture, according to the best advantages they have: They must interpose, I say, so far as to judge, whether any of these persons have so interpreted those

controverted texts, in which each chooses to confess his faith, as to express aright what they believe to be the necessary articles of Christianity; and though there be no necessity, that a church and its members should agree in the sense of every text, yet there must be finally such a sense of some Scriptures, given or assented to by the person desiring communion, as may satisfy that church that he has knowledge sufficient for it. Now this may be done without an imposition of any set human forms of words, as I have shewn before.

SECTION III. My second argument is this:

To make a mere confession of express words of Scripture a sufficient test of knowledge to demand christian communion, denies that liberty to some Christians, which it indulges to others; nay, it denies the same liberty to a whole community of Christians, or to their ministers, which it indulges to each catechumen, or to every single person that offers himself to their communion. I make it appear thus:

Each single person that offers himself to communion with a particular church, has liberty given him by this rule, to put his own sense on the commands of Christ, in demanding of communion; but the ministers or members of this church are not allowed this liberty to put their own sense on the commands of Christ about receiving him. Perhaps they know by discourse and conversation, that this person denies some articles of the christian faith, which they think necessary, while he confesses the words of Scripture, and abuses them to a pernicious sense; yet he has liberty to impose himself on their communion, because he thinks he is fit for it in his own sense of Scripture; but they cannot, according to this rule reject him, though in their sense of Scripture they think him unfit.

According to his own interpretation of the Bible, he says, he owns all the fundamental articles: According to their interpretation, they say, he denies some of them; yet this test opens the door of admission to him, whensoever he demands entrance, and does not permit them to shut it.

They believe the Scripture forbids them to receive such to christian fellowship, who have not received the christian faith; yet this rule allows them not to forbid him their fellowship, though they think he denies the faith in some necessary parts of it. They think, according to their sense of the word of God, that he has no appearing right to the kingdom of heaven, and consequently, that he has no right to enter into the church or kingdom of Christ on earth; but according to this rule, they are bound to admit him, even contrary to their own sentiments and consciences. He has liberty to demand, but they have none to refuse.

This seems to me like a restraint of the liberty of a multitude of professed Christians, to secure or indulge the liberty of a catechumen, which is far from impartial justice, in the very nature of things. Now certainly Christ would never impose such a rule of communion on his churches, which should not be reconcileable to common justice, and to that great and general rule of his, *Do to others as you would have others do to you.*

SECTION IV. My third argument is this: That a child, an ideot, or a very ignorant man, may repeat any short form of confession, drawn up in the express words of Scripture, and say, he believes it; or he may subscribe or assent to any longer form, even the whole Bible itself: But surely a child, an ideot, or an ignorant person, who have not a real knowledge and understanding of the things of Christianity, are not fit to be received into a christian church, nor admitted to the Lord's-Supper. There is no formal

repetition of a few words by memory, can give any proof of christian knowledge in the heart; no assent or subscription to a book, as big as the Bible, can make it evident that a man understands five lines of it: Yet if this be the proper test, such ignorant creatures must be received to the noblest and highest ordinance of Christ upon earth.

Suppose a poor wretch that wants bread, and knows almost nothing of Christianity, hears that such a congregation maintain their poor well, and in order to secure a good maintenance, he gets a few scripture expressions on the most important points without book; his life has been obscure, unknown, and, so far as appears, not any way scandalous; he proposes himself to communion with this church, he repeats the creed, or, if he be desired to make a larger confession, he takes up his Bible and says, "I believe every word that is contained between these two leathern covers to be true; and I resolve to live according to it." This poor wretch may demand admission according to such principles.

If you say, There must be some inquiry made, whether he understands the words of Scripture, or no; then there must be some determined sense put upon those words of Scripture as proposed by the church, or as assented to by the communicant; and thereby you depart from your pretended rule, that the express words of Scripture are a sufficient test of knowledge.

I grant, that after the utmost search and inquiry into christian profession, and piety of conversation, some hypocrites will creep into the best ordered and purest churches; human affairs are so constituted: We cannot know the hearts of men: Tares and wheat must grow together till harvest: But it is sufficiently plain in Scripture, that they ought not to admit those to christian communion, who understand not the first principles of Christianity; and therefore we ought to seek some satisfactory evidence of a thing that may so easily be found, *viz.* christian knowledge, and not bind ourselves to such a rule of admission as can give no evidence whether a communicant has christian knowledge, or no.

I might add under this argument also, that as a child, an ideot, or a person ignorant, or a heathen, may claim communion according to this rule; so a child, or a heathen, is a sufficient judge who has knowledge enough to be admitted to the fellowship of a church of Christ; for a child, or a heathen, can tell whether the person proposing himself, subscribes his Bible, or no; whether he declares his general assent to all the Scripture, or no; or whether he repeats any express words of Scripture aright, or no? As there is no need of any real understanding in communicants upon this principle, so there is no need of any judgment or prudence in the churches of Christ in order to receive them: No need of elders or governors, men of wisdom and discretion, to use the keys of the church, where the door is so wide, that half the children in a parish may go into the church at once; and it opens so easily, that a child or a fool can manage it.

SECTION V. A fourth argument against this test of communion is this: If a mere assent to the express words of Scripture be a sufficient test of christian knowledge to claim admission into a church, this opens the door for an endless variety of different and contrary opinions and practices, to enter into the same church; multitudes of heresies, that relate both to faith and practice, may swarm in the same communion; truths and errors, fundamental and not fundamental, will be mingled here; errors, tolerable and intolerable, extremely dangerous, if not damnable and destructive, will be admitted: For all that profess them in our age and day, in protestant nations, will subscribe to the

Bible as the sufficient rule of faith and practice; nay, all persons that are not heathens, deists, jews, or mahometans, may claim a place in the churches of Christ.

Now let us first recount some of those various doctrines that will hereby be encouraged in the same communion, and then consider what will be the inconveniencies attending such a mixed community.

First, Let us recount the various doctrines, and their professors, that will be encouraged in the same communion by this rule.

1. The anthropomorphites say, that God hath proper parts, hands and feet, and eyes and ears, and is really in the shape of a man, according to the express words of Scripture, taken in a plain literal sense. One of this opinion, as I am informed, lately proposed himself to christian communion.

2. The allegorists, on the other hand, explain in a metaphorical and figurative sense, whatsoever expressions they find in Scripture, whose literal sense does not agree with their notions. Upon this principal some, that deny the proper sacrifice and satisfaction of Christ, say, that his atonement, redemption, and sacrifice, are but figurative expressions. Others believe salvation to be obtained only through Jesus Christ, but they mean Christ, or the light, within them.

3. The arians say, that Jesus Christ was a mere creature, made out of nothing, before all other creatures, and superior to angels, endued with divine power, and called God, and that he assumed flesh without a human soul.

4. The sabellians believe, that the blessed Trinity, the Father, Son, and Holy Spirit, doth by no means intend three proper distinct persons, but is a mere trinity of names and manifestations, modes and relations, in the godhead or divine nature, and that the Son of God was not properly a person before his incarnation.

5. The socinians, derived from the old samosatenians and photinians, say, that there is no such trinity of persons in the divine nature, as the athanasians and the school-men maintain. That Jesus Christ is a mere man, and had no being before he was conceived of the blessed virgin. That Christ did not make any proper satisfaction for the sins of men. That the soul sleeps with the body, and rises with it at the resurrection; and, after all, they acknowledge that the light of nature is sufficient to direct men to eternal happiness, and that nothing is to be believed in the sublimest points of religion, but what is to be understood and judged of by our reason.

6. Enthusiasts, on the other hand, believe that reason is of no use in things of religion. That human learning doth more hurt than good among Christians. That there is no need at all of it for ministers of the gospel. That our own labour for our salvation signifies nothing, and therefore they wait for sensible impressions of the Holy Spirit, to move them to the common duties of Christianity.

7. The pelagians say, that there is no imputed or inherent original sin. That man, after his fall, had a proper power and free will in himself to become truly pious, or grossly wicked; and to do either good or evil. That men may obtain the favour of God by the merit of their own good works.

8. Arminians, or remonstrants, generally hold, that there is no certain and absolute election or redemption of particular persons unto salvation. That there is no need of the almighty, sovereign, and efficacious influences of the Spirit, in order to conversion. That believers may fall and perish eternally. And that there is no certain perseverance of the saints.

9. The antinomians hold, that all true believers were justified from eternity. That an elect person is never chargeable with sin before God. That the moral law of God is not of perpetual obligation to the consciences of believers. That sin can do a believer no real injury.

10. The strict calvinists deny every single proposition, and peculiar sentiment, that I have here mentioned, under all the foregoing heads, and call them all errors; and believe the contrary propositions to be divine truths delivered in the Scriptures.

I might here add a variety of doctrines and sects, that have in former ages troubled and divided the church, *viz.* the eutychians, who supposed that the two natures of Christ were so united and blended together, that the human was lost in the divine. The apollinarians, who taught that Christ brought his flesh from heaven, and that he had no human will, but only a divine will. The donatists, who required the true church to be without sin or spot. The origenists, who deny the eternal punishment of sinners, and fancy the devils themselves shall at last be saved.

I might further reckon up a long train of wild and unaccountable opinions, which have no settled name, yet all arise from various senses, that the lusts, or the fancies, or humours, or mistakes of men have put on the express words of Scripture: But these are sufficient in this place.

I would not be understood here to intend that every person, to whom any of these names may be affixed by men, believes or professes all the doctrines that are ranged under any of these heads: All that I mean by this catalogue is this, that under these several names, in our general and common discourse, all these principles or propositions are usually comprehended and understood.

Note, I have not mentioned the papists, because they allow not the Bible to be a perfect rule, but build part of their religion on human traditions, and the pretended infallible authority of their church.

But so many of all those sects of Christians that I have mentioned, as are found in our day, do all take the Bible for their perfect rule of faith and practice, and each of them will subscribe the whole Bible, at least in their own translation of it, and profess to believe all the express words of Scripture: Now if any confession of express words of Scripture be a sufficient test of christain faith, all these persons have this qualification, and cannot be denied christian communion in any church, to which they propose themselves, for want of true christian knowledge.

And now I would ask, what a wretched sort of communion is it, that could be maintained in such a church, of such widely different opinions? What fellowship could they have in hearing the same sermons, in joining in the same prayers, and in all sacred offices? What holy harmony, what order, what peace or christian unity, can be carried on in such a mixed and disagreeing multitude? But I insist no longer on this at present.

SECTION VI. In the prosecution of the fourth argument, I come therefore, in the next place, to consider what will be the inconveniencies of making such a large and wide door to the church, and of encouraging such a promiscuous communion: For though all these can never walk and worship together in any peace or order, yet all may be admitted on this foundation.

One great inconvenience is this, *viz.* Some persons that deny necessary fundamental truths and duties, without which a man cannot enter into the kingdom of heaven, may

enter into a church on earth, and claim christian communion by this rule of admission: For it may perhaps be doubted, whether all necessary particular articles, as well as general ones, are found in express words in the Bible, which I shall afterwards have occasion to inquire into. But if all necessary articles were found there expressly, yet the grossest heretics may consent to those expressions, and explain them only in a metaphorical sense: So the socinians explain the expressions of Scripture concerning the sacrifice and atonement of Christ, and make them all mere metaphors, to signify something of a much inferior nature: But, be their explications and their sense of Scripture what it will, yet they may demand christian communion upon this principle, that they subscribe the Bible, and every expression in it; though they explain the fundamental and essential articles of it quite away by figures and metaphors.

Indeed this has been the practice of heretics in all ages to run to this refuge, and make the words of Scripture their hiding place and defence; having learned well from their subtle teachers, or their own cunning devices, to twist and turn the words of Scripture by figures, and tropes, and distinctions, into their own pernicious sense; and this ever will be the practice of persons, grossly erroneous in the things of religion, that yet would appear to agree with the Scripture, and hold the christian faith.

They may tell you that Christ is their only hope of salvation, and their way to God the Father; but they mean a Christ within, or the remains of the light of reason, and the dictates of a natural conscience.

They may assure you they believe the resurrection of Christ from the dead; but they mean nothing but Christ within them, in the rising or awaking of the conscience from stupid inactive silence.

They may assent that Christ is God, but mean only a metaphorical God, because he is made a king or governor of the church.

They may profess the whole Scripture in their own sense, and in the mean time they may believe such contradictions as these, *viz.*

I believe, *God worketh all things after the counsel of his own will*, Ephes. i. 11. Yet I believe, that the decrees of God are nothing else but immutable fate, and the necessary connection of second causes, as Mr. Hobbs.

I believe that "God knoweth *all his works* from the beginning;" *Acts* xv. 18. Yet I believe, this foreknowledge is nothing else but a perfect sagacity of mind, and immediate contrivance to turn all things that happen to fulfil his own designs, as effectually as if he really foreknew. So a much better man than Mr. Hobbs has explained it.

I believe, that *in the beginning was the word, and the word was God;* John i. 1. Yet I believe that Jesus Christ had no being before he was conceived, and born of the virgin, and that truly and properly he is but a mere man.

I believe, that we must *flee fornication;* 1 Cor. vi. 18. But I believe that nothing else is intended in all such texts, but spiritual fornication, which is idolatry.

I believe that we must "keep ourselves from idols," and not practise idolatry; 1 *John* v. 21. Yet I believe that we may worship the true God, by idols or images; for the idolatry which is forbidden in the Scripture, signifies only the worship of stones, and stocks, and images, for real and true gods.

I believe we are bound to *follow peace with all men;* Heb. xii. 14. Yet I believe we may contend for the faith so earnestly as to burn heretics.

I believe we must *follow holiness* too, *without which no man shall see the Lord;* Heb. xii. 14. Yet I am persuaded sin can do no real hurt to a believer.

Now who is there that has any value for the honour of the gospel, for the glory of Christ, for the purity of our religion, and the welfare of the church, that would establish such a test of communion, by which all these sorts of persons may claim admission? A church composed of such a variety of sects, that differ so widely in points so numerous and so important, would much more resemble the ark of Noah, with all manner of creatures in it, clean and unclean, than the fold of Christ, where none but his sheep should have admittance, or such as have the visible marks of his sheep upon them.

The other incongruities, inconveniencies, and mischiefs that will necessarily attend a church, founded upon this test of admission, shall be more largely and particularly described in my answer to the next question, to which I refer the reader.

Perhaps it will be said, by way of reply to all these arguments, that "where any person professes his faith in the mere words of Scripture, and yet makes it appear that he understands them in such an erroneous sense as is inconsistent with the gospel of Christ, or the fundamentals of Christianity, such a person ought not to be admitted to christian communion, because he plainly overthrows by his explication, what he asserts by his confession: But where he gives no explication at all, it should be presumed that he believes all necessary truth." To this I answer,

Answer I. That if a confession of faith in the mere words of Scripture, be a sufficient test for church-fellowship, no man who professes those words ought to be excluded, let him explain them how he please; for if the rule of Scripture does indeed require you to receive all that profess the faith in scriptural words, no particular and perverse explications whatsoever should break in upon this sacred rule, lest hereby you who exclude him, set yourself up as a judge of the sense of Scripture for other folks, and instead of making the words of Scripture your test, you make your own sense of it the test of communion, which is the very thing you pretend to avoid, and which you profess to renounce.

Answer II. I add further, if you allow that a perverse or antichristian exposition of Scripture in fundamental points, may exclude a man who professes the words of Scripture from the communion, then a just and reasonable suspicion of any person's antichristian exposition of it, may give just ground for inquiry into his sense of it, before he be received to a christian church; even as a just and reasonable suspicion of any man's immorality gives just ground for a stricter inquiry into his morals; for if he hath not christian faith, he is no more fit for the christian communion, than one who hath not christian practice.

Now suppose a person be a mere stranger to you in his moral life, you ought to make inquiry concerning his morality before you receive him, and not take his virtue for granted: And by the same reason, if he be a mere stranger to you in his faith, you ought to make the same inquiry concerning his sense of Scripture, in order to know that he is not an heretic, or that he does not profess scripture words in an heretical sense; and not always take it for granted, that he believes the Scripture in its true sense.

Thus, these two parts of the test of communion, *viz.* profession of the true faith and a pious practice, will stand upon the same foot; and a man may be excluded, even by your own concession, if he wants either of them, even though he profess the words of Scripture. And there ought to be an explicit discovery of both these by the candidate, in order to christian communion, and not merely an implicit belief of them in those who are appointed to examine him.

As I grant with you, that where a person has in general a fair moral character among those who know him, we ought not to take up and indulge groundless and unreasonable suspicions of his virtue; so where a person, who appears to be sincere and pious, makes profession of his faith in more general language, we ought not to take up unreasonable and groundless suspicions that he is an heretic. But as in times of universal and spreading corruption of manners, there should be a more strict inquiry into the conversation of every communicant, so in times of spreading error, where scripture words are frequently used in an heretical sense, there ought to be a more strict inquiry into his faith; and it is a very reasonable demand that he should explain his particular sense of the general words of Scripture in fundamental points, and tell what he means by them, that he may not cover gross heresies and antichristian opinions, under the confession and disguise of scriptural language, that so antichristians may not be received into a christian church.

SECTION VII. The last argument I shall propose against making a confession of the express words of Scripture a sufficient evidence of christian knowledge, is this, that the Scripture itself does not directly, and in express words, contain all that knowledge of particular truths and duties that is necessary to christian communion. I say of particular truths and duties, for I own it contains all in generals.

Under the Seventh Question, I have made it appear evidently, that the knowledge necessary to christian communion, includes in it both a knowledge of all those things that are necessary to salvation, and a knowledge of all those things that are necessary to practice, and enjoy this communion.

Now if we first survey all those truths and duties that are necessary to salvation, perhaps we might find particular articles, either of faith or practice, that are not set down in most express language in the very words of Scripture. I grant they are all so expressed in general terms, that a mean understanding, and a slight and easy turn of thought, are sufficient to derive from Scripture all the particulars that are necessary to salvation; every needful explication, or consequence, lies plain and open to the view of common reason, though it may not be directly expressed in the very letter of Scripture.

But I choose rather to survey those things that are necessary to practice, and to enjoy christian communion; such knowledge is as needful in order to partake of the Lord's-Supper in a regular manner in the christian church: And these things are not all contained in express words of Scripture, but require something of explication and consequence to make them appear. As for instance,

1. If baptism be necessary before the Lord's-Supper, it is necessary also to know the nature and design of baptism, the meaning of being baptized in the name of the Father, Son, and Spirit; and the manner of performing it, whether it must be done

by dipping or sprinkling, or whether both be not lawful; and whether baptism in infancy be sufficient? Now all these are not written down in express words of Scripture.

2. It is necessary also that a person should know what is the nature of the Lord's-Supper; what the bread and wine represent; what is the design of blessing, breaking, and distributing them; who are the persons that must do this? And a woman must know, whether women are to be admitted to the Lord's-Supper? All which things are not fully and expressly delivered in the very words of Scripture.

3. That several persons who make a credible profession of Christianity, must agree to meet together, in order to celebrate christian worship, and partake of this ordinance; and that it is not to be received alone, because it is an ordinance of communion.

I might instance in other things that are necessary attendants on these ordinances, considered as human actions, which the light of nature plainly dictates, and which may be drawn by the most obvious and natural consequences from the directions, or examples of Scripture; but they are not found there in express words, nor indeed is there any need of it, since they lie so open to the weakest exercise of reason.

Now to sum up the last argument. If there be any articles of christian belief, or practice, necessary to salvation, or to public christian worship, and to a regular participation of the Lord's-Supper, which are not laid down and described in the express words of Scripture, then may we not conclude, that a mere declaration of the belief of the Bible, or any part of it, is not a certain evidence of knowledge sufficient to demand christian communion, where all explications and consequences are utterly refused?

SECTION VIII. The great objection against all my discourse is this; that "since the word of God is a sufficient and perfect rule to direct Christians in their faith and practice, the words of Scripture are therefore a sufficient and perfect test of christian knowledge." The Scripture, say they, is certainly capable of itself to determine all our doctrines, and all our duties; it is sufficient to furnish *the man of God* perfectly *unto all good works*, and it is *able to make* every man *wise unto salvation.* It was given for this end by the *inspiration of God;* and it does not stand in need of the assistance of human inferences and explications, in things necessary for Christians to believe and practise; 2 *Tim.* iii. 15—17. Therefore an acknowledgement of the Scripture, or the most considerable articles of Christianity in the express words of it, is a sufficient test for christian communion.

This argument is very popular, and drawn out into much flowery eloquence, to persuade and captivate the unwary. The writers on this side of the question brighten and flash upon the reader, and, as it were, overwhelm him, if the eye of his judgment be weak, with such dazzling language as this: "What, are not the words, which God himself hath written, effectual for all the purposes of Christianity, without the addition of the words of men? Is not God wiser than man? And can any man form for himself a better test of knowledge, than God has done? Did not Christ, and his Spirit, which spoke by the apostles, know how to express divine truths in the best manner, and in words fittest for every use and service of the christian church? Has our Lord Jesus Christ so little consulted the truth and security of his gospel, as well as the peace and welfare of his churches, as not to express every matter necessary to communion, in plain language? Can we, shall we, dare we indulge so unbecoming an opinion of the care of our blessed Lord? Can there be any other words necessary to express his

doctrine by, than those which himself has chosen? Thus the torrent of such a popular harangue drowns all distinctions of things, and carries away the assent before due consideration.

To all this flourish, I answer first by way of concession; that our blessed Lord is all-wise, and has the tenderest care of his church, in providing a sufficiency of helps for every occasion. The holy Scripture is complete, and sufficient of itself to teach us all things necessary; and the instructions of it are clear, plain, and evident to every humble inquirer: There is no need of any additions of men to this perfect rule, nor are any words that men can invent fitter to express those doctrines and duties, more suitably to the occasion and purpose for which each part of Scripture was written: I am abundantly persuaded, that from the book of God every plain Christian may easily collect his own duty in the necessary affairs of his salvation, and every man may obtain knowledge enough to fit him for the communion of a christian church.

Section IX. But to give a full and direct answer to the force of the foregoing objection, I would lay down these considerations, which may help to remove those glaring rays of rhetoric that diffuse themselves round the argument, impose upon, and dazzle weaker minds, and prevent them from beholding the question in its true light, which, if once seen in its proper sense, would be determined with much ease.

Consideration I. It is generally agreed by protestant writers, that not the mere words of Scripture, but the sense of it is properly Scripture. The words are but the shell in which the divine ideas are conveyed to the mind. It is not the words of the Bible, but the sense of it, which has the proper characters of the word of God. If any words or language might pretend to this, surely it must be the Hebrew and Greek originals: Now these have no such power upon an unlearned Dane, or Swede, a French or an English man, as is attributed in Scripture to the word of God. These words in Greek would not pierce or divide in sunder the soul and spirit of a barbarian: The gospel in mixed Syriac language, in which Christ himself spoke, would never prove the power of God to the salvation of a Roman, or a Turk; nor could the perfect law of the Lord, in Hebrew, convert the soul of a Muscovite. But when these original words are translated into each language, and convey the same divine instruction and sense to different nations; this sense and instruction, which are properly the word of God, work upon the heart, and make a new creature; for the sense of Scripture is the same in all languages, though the words are very different. Hence it is plain, that we do not in the least derogate from the honour of the Bible, while we declare, that it is the sense of Scripture, and not the mere words of it, that must be our rule of duty and practice.

Consideration II. That the mere words of Scripture were never given us for a test of truth and error, but the sense of Scripture is such a test; much less can we suppose the words of Scripture given us for a test of every man's knowledge, in order to christian communion. Those that are of this opinion, profess indeed to pay a most exalted and superlative honour to the holy Scripture, in making the very letters and syllables of it so effectual and powerful to determine all controversies in the christian church with the greatest ease, and to charm and subdue the warring tongues of men to submission and silence: For if an heretic acknowledges these letters and syllables to be divine, no man must open his mouth against him. But surely this is such an honour, as God never designed for letters and syllables; and, if I might venture to use so hard a word, I

should ask whether it were not a superstitious regard paid to ink and paper? When errors are proposed, we are indeed called to examine them by *the law and the testimony;* Isaiah viii. 20; and it is said, *if they speak not according to this word, it is because there is no light in them.* But the design of this text is not to make the very words and syllables the judges of truth, but the meaning and sense of them: I prove it thus:

Suppose I doubt whether Christ "made a real and proper satisfaction to the justice of God for the offences of man; I compare this with the words of Scripture, and I find there, that "Christ redeemed us from the curse, he bare our sins on his body, he was made a sacrifice for sin, he is our propitiation, or atonement;" but I cannot find the words "real and proper satisfaction" in Scripture; how then must I judge whether this be truth, or no? I cannot do it by the mere words, for these are different; but by its agreement in sense and meaning with those other scriptural expressions, I find it to be a divine truth.

I prove it by another instance, thus: Suppose I am told, that I must "subdue my pride and vanity of mind, and that I must repent of all backbiting and intemperance, of which I have been guilty, if ever I would be saved:" I consult my Bible, and there I find that "I must repent of sin, that I must mortify the deeds of the body, that I must crucify the flesh with its lusts, that I must pluck out my right eye, and cut off my right hand, if I would enter into the kingdom of heaven." Now how shall I know what is my duty? Surely, the literal sense of the words cannot be. How then shall I find my duty, but by explaining the spiritual sense of these metaphors, in which Scripture so much abounds. A *right hand*, and a *right eye*, signify those sins which are beloved as those members of the body; and then I must draw such consequences as these, *viz.* "If sin must be repented of, then backbiting and intemperance must be repented of, for they are sins; and pride and vanity of mind must be subdued for the same reason."

If the words of Scripture may not be treated in this manner, and applied to solve any doubt or difficulty by explications and inferences, the Scripture cannot be a sufficient test of truth and error; and if this method be allowed, then it becomes also a sufficient test of christian knowledge in order to communion; which is all that I contend for.

Consideration III. Most of the books of Scripture were written at different times, and upon very different occasions, to reprove some particular vices, to refute some special errors or heresies, to instruct in some particular affairs relating to doctrine and duty, in such expressions as were most exactly suited, and divinely proper to answer those special designs. The metaphors and figures of speech there used were well known, or well explained in that age, and accommodated to the genius and understanding of those persons, for whose benefit they were first written: And by these divine writings we have sufficient direction to find out all necessary truths and duties at all times, in all nations, and ages of the church, by comparison of things, and just inferences. Now though God foreknew what errors would arise in every age, yet it is impossible that so small a book as the New Testament, could mention and refute every error that might possibly arise, or forbid every particular vice or corruption that might spring up in following ages; and all this in express words, and in terms most directly opposing those sins and errors which are almost infinite, and as yet had no being. Therefore, without any derogation from the sufficiency of Scripture, we may justly allow, that it is possible for wise and pious men, that live in those succeeding ages, to explain the general sense of Scripture in such expressions, as may more directly and

effectually guard against the sins and heresies of the age; this is certainly needful in order to instruct the ignorant; and some confession of this kind may be proper and necessary in times of error, to keep the communion of the churches of Christ pure and holy; yet this also may be done, as I have shewn before, without any express imposition of any set human forms; but it can never be done effectually by making the mere words of Scripture a test of communion, which in all ages heretics have learned to pervert to their own sense.

Consideration IV. The sufficiency of Scripture for our rule of faith and practice in revealed religion, does not signify a sufficiency of the bare words and syllables of Scripture, to declare every particular article of doctrine or duty in direct and express terms: But that it sufficiently includes and contains them all; so that by a most easy and obvious exercise of reason, all necessary truths and duties may be found, either in express words, or in easy, plain, and natural consequences; and that there is no need of old traditions, nor any new inventions of men. The sufficiency of natural light, to direct innocent man in natural religion, does not signify that all the general and particular articles of it were written actually, and constantly abiding in the mind, but that they are plainly and easily deducible by natural reason. So a book is said to be sufficient to teach any art or science, if it contains all the main principles of it, so that all the parts of this art or science may be very easily learned thereby.

The New Testament is sufficient to teach us the holy skill of prayer, because it includes every thing necessary for that duty; and the Lord's prayer has been generally esteemed a perfect model for that part of worship; yet a child may say over all the words of the Lord's prayer, and know not at all how to pray: And if it were possible for a strong memory to repeat all the New Testament by heart, it would not be a sufficient proof, that that person was acquainted with the divine skill of praying. So the Bible is abundantly sufficient to furnish a preacher for his work; but if he could say never so many of the words of the Bible without book, it would not be a proper test of his ability to preach. This spiritual furniture and skill for the performance of praying or preaching, are to be obtained by comparing several parts of the Bible together, by learning their sense and meaning, and by drawing proper inferences from several passages of it, and knowing how to apply them to all particular cases in sermons and prayers: The same may be said in proportion concerning the furniture and fitness of a person to be admitted to christian communion. Now in order for a man to manifest that he has this spiritual skill and furniture, he must acquaint me in some other words, what he means by these words of Scripture that he can repeat by memory.

It is not at all inconsistent with the clearness and perfection of Scripture, that the unlearned should use their reason in finding out doctrines and duties, by comparing Scripture with Scripture, and drawing general inferences from the practice, example, and occasional speeches of Christ and his apostles; as it has never been counted inconsistent with the clearness and perfection of it, that learned men must translate the Greek and Hebrew into our mother-tongue: For the Bible in Greek and Hebrew is not more insufficient to lead a poor Englishman to heaven without translation, than an English Bible is to lead him thither, without the exercise of his reason in explications and inferences.

The plain and natural consequences of Scripture, have in a larger sense been often called Scripture itself; and have always been justly allowed as sufficient to determine any controversy in religion, or prove any truth, or refute any error. The example of

Christ and his apostles, shews us the use and the necessity of consequences; they argued in this manner against their opponents, who did not acknowledge their divine commission. Chillingworth himself, in that famous paragraph of his, which is so often cited, acknowledges that plain inferences from Scripture make up part of our religion: "The Bible," saith he with emphasis, "the Bible is the religion of protestants; whatsoever else they believe besides it, and the plain irrefragable indubitable consequences of it, well may they hold it as a matter of opinion, but not as a matter of faith and religion."

Nor is it necessary to the plainness, evidence, and strength of any consequences of Scripture, that all persons should own them, and none deny them; for the plainest and most open truths have been denied by some persons in all ages, through want of attention, through false education, through the prepossession of other opinions, through the attachment to a party, through obstinacy of temper, and blind zeal: But all the consequences of Scripture, that are necessary to faith and practice in order to salvation, are so plain, that a honest, sincere, and diligent person, though weak in understanding, may easily find them out by reading, meditation, humble prayer, and readiness to receive the truth in the love of it.

Here let it be noted, that the necessary consequences of Scripture, may be called the doctrine of Scripture; though the consequences of the doctrines of Luther, Calvin, or any other man, may not be called their doctrines; because the Spirit of God, who searcheth the deep things of God, well knew all the propositions and consequences that ever could be drawn, and fairly deduced from the words of Scripture, when he first inspired the sacred writers; and therefore he designed them all as certain and divine truths. But it is not so with men, who may hold such opinions as are attended with unhappy consequences, which yet they themselves may not be aware of, or perhaps may expressly deny.

Consideration V. The most perfect rule always needs a proper application to every particular case; and this does not at all diminish its perfection, nor lessen its perspicuity. Scripture is still the perfect and final judge of truth and duty in things sacred, though every man must apply the words and sense of Scripture to his own case, for his own instruction, edification, and salvation; and every church, for their own practice of communion, must apply the words of Scripture according to their own best judgment. The law is a perfect judge of right and wrong in things civil, though it must be applied, by the reason and wisdom of man, to particular cases. A rule, or square, is not imperfect because it requires the hand of the builder to apply it, in order to measure the house, or the wall. We are not brutes that cannot reason, nor mere white paper, fit to take nothing but the express stamp of letters and syllables; reasoning is one of our noblest powers, and God demands its exercise: We are bid to *search the Scriptures*, and *compare spiritual things with spiritual*. It is impossible to transfer, or apply, any general sentence of Scripture to particular exhortations, reproofs, instruction, conviction, or comfort for ourselves or others, without deducing consequences, and thereby bringing the general words to our daily present occasions: Nor is it possible for any persons to be admitted into a church of Christ, upon just and regular grounds, without comparing their personal characters, their confessions, and their practice with the word of God, by the exercise of our reason, and applying to that

particular case what we derive and infer from general rules, or parallel examples; now all this cannot be done without making use of the consequences of Scripture.

Consideration VI. This test of christian knowledge, this supposed rule of communion, is not found among the express words of Scripture. I might therefore ask leave of our protestant brethren, who strenuously maintain this principle, to make an address to them, in their own language, thus: "Surely if this rule of christian communion be of such absolute necessity to maintain peace, and secure truth, we may wonder why it is not written down expressly in Scripture. Has Jesus Christ so little consulted the peace of his churches, and the truth of his gospel, as to neglect so necessary a rule of church communion, without which you suppose that neither peace nor truth can be maintained? O what a world of strife and confusion in the churches might have been prevented, by an express appointment of the words of Scripture to be the universal test of knowledge for Christian communion! Is the Scripture so careful to express all things necessary, and yet is this omitted? May I not thence infer, according to your own principles, that this rule of communion is not necessary? Indeed, in my opinion, it is so far from being written in the Bible in express words, that, by all the exercise of my reason, I cannot derive it from my Bible by any plain or certain consequence; I have not yet seen evidence enough to believe it to be a sufficient, or an appointed rule; much less of so absolute necessity to christian communion, truth, or peace."

QUESTION XI.

WHETHER ALL SORTS OF PROTESTANTS MAY JOIN TOGETHER AS MEMBERS OF THE SAME CHURCH?

SECTION I. By the name "protestant," I intend not only those that protested against the corruptions of the Roman church, and the edict of the emperor in Germany at the beginning of the reformation, but I conclude also all that hold the same general principle, making the Bible the only and perfect rule of faith and manners, and giving every single person a right to judge for himself concerning the sense and meaning of the Bible in matters of religion, and to practise according to his own sentiments in things sacred.

Now, if the question be put, "Whether all such persons professing the same protestant principle, with all their different sentiments, may be united in the same church," I answer,

1. It is impossible, and they cannot.

2. It is unlawful, and they ought not.

3. If it were both possible and lawful, yet it is highly inexpedient, and therefore it should not be done.

First, "It is impossible, and they cannot join in the same communion." There are some actions necessary in order to christian communion in worship, which are appointed in general in the holy Scripture, but must be performed in some particular and determinate way: Now this, in the very nature of things, makes it necessary to determine the words of Scripture to a particular sense; and different sects of pro-

testants determine these words in such different ways, as will often be exceeding hard, and sometimes utterly impossible, to be reconciled and made consistent in one communion: As for instance,

1. Some cannot in conscience attend upon the ministry of a person, who has not been ordained by the imposition of the hands of a diocesan bishop, for they think him no minister of Christ; others refuse him for a minister, who has not had the hands of several presbyters imposed in his ordination; and there are a third sort again, that think either of these two ordinations to be unnecessary, if not unlawful; and believe him no minister of Christ, unless he be chosen by a congregation, and set apart to that work amongst them by fasting and prayer.

Note, That I speak here of those that are each of them strict and rigid in the extremes of their own way, honest and sincere in the main, but zealous and obstinate in their own principles; now these can never join under one ministry, unless their minister has passed through all these three sorts of ordinations, which is not to be expected.

2. Some think it utterly unlawful to pray in public, without a form, lest "rash and hasty expressions be uttered before God;" *Eccles.* v. 2: Others think it equally unlawful to use a form of prayer, lest they *quench the Spirit* which is given to teach them to pray; 1 *Thess.* v. 19; *Eph.* vi. 18: And how can these possibly join in the same prayer?

3. Some esteem the Lord's prayer so glorious, so perfect, and so universal a prayer for all times and ages, that it should never be omitted in public worship; others fancy it unlawful to be used at all as a prayer, ever since the Spirit was given to men at the ascension of Christ, because it is, in their sense, a confinement of the Spirit to a form of words.

4. Some think the practice of singing the praises of God to be a necessary part of christian worship, and cannot persuade themselves to live without it; others esteem it a mere antichristian invention, and they dare not be present for a moment in an assembly that sings, lest they give countenance to false worship and superstition; and if any other music be joined to the voice, they count it still more heinous and abominable.

5. Some believe the Lord's-Supper cannot be celebrated aright at noon, because it was instituted in the evening, and is called a supper; others that live scattered at great distances in a wide country parish, can never meet to communicate in an evening, especially four or five months in the winter; and they think the Lord's-Supper at noon is a very lawful and proper practice, and necessary to them, because otherwise they cannot attend it.

6. Some suppose, that it is very irreverent and unlawful to communicate in a sitting posture, and think it their duty to kneel, when they receive the seal of the greatest of blessings from the hands of God: Others think no other posture of body lawful besides sitting; because it is a feast, and was instituted with the proper gestures at a table; and many foreign protestants esteem sitting to have too much familiarity and irreverence, and kneeling too much like adoration of the bread, and therefore always stand at that ordinance. And here we may suppose some narrow-spirited Christians, of each sort, that dare not be present at the sacrament, where a different gesture is used, lest they seem to encourage a sinful practice by their communicating together.

7. Some are persuaded, that none have a right to the communion that were not

baptized by dipping, and that upon a profession of their faith, for they count all the rest unbaptized; and these can never join at the Lord's-Supper, with a minister or people that were only baptized in infancy by sprinkling, and think that sufficient.

Some are satisfied that there is no holy-day in the week but Saturday, or the seventh, and they require public worship and the communion on that day; others think the first day of the week is alone holy, and they demand the celebration of the Lord's-Supper on that day constantly; nor can they leave all the common businesses of life to attend on the worship of Saturday.

Now every man sees how impracticable it is to bring these different sorts of protestants to the settled communion of the same church. I confess, I have represented their different sentiments in their extremes, and in the highest degrees of opposition; but it must be granted also, that several such sort of Christians are to be found, whose weaker judgments and warm zeal, have carried these matters to the same extremes of opposition in which I have represented them; therefore my argument stands good, and such a promiscuous communion appears impossible.

Yet here I would lay down this caution: That though these sorts of protestants are necessarily excluded from mutual communion, it is not because either of them are unworthy of it, or because it is unlawful to communicate with each other, but merely because their different and contrary forms of worship render it impossible. Let them not therefore censure or *judge one another*, but so far as true piety appears, let them account each other good Christians, and be ready to do all proper christian offices for and toward each other; and let them wait till God shall convince either of them of their excessive rigour, and unreasonable strictness, in their particular opinions, and in the mean time let them be heartily willing to join with each other in such parts of worship in which they agree, where just occasions may require it.

Secondly, If the thing were possible, and such a mingled communion of all professed protestants could be practised, yet there are some cases wherein it would be unlawful, and ought not to be practised: For several persons may believe the Bible to be the only and perfect rule of faith and duty, and yet may put such a sense upon it, as is either dishonourable, dangerous, or destructive of the christian faith: I have made this appear at large under the foregoing question; there I have shewn that there may be anthropomorphite and arian protestants, sabellian, socinian, and pelagian; rational and enthusiastic; literal and allegorical; calvinist, arminian, and antinomian; there I have largely proved, that persons professing the Bible may deny the divinity and satisfaction of Christ, the real resurrection of Christ, the operations of the Holy Spirit, the final resurrection of the body, and several other such important doctrines, by turning the expressions of Scripture to a mere allegorical and figurative sense: Now, as a certain author says, "If a man use the words of Scripture, but impose a very different and new sense upon them, he may thereby as well bring in a new gospel, as if he used words of his own; and so he subjects himself justly to the anathema, or curse of the apostle, Gal. i. 8, 9, *As we said before, so say I now again, if any man preach any other gospel unto you than ye have have received, let him be accursed.*" It is a very just and remarkable saying to this purpose of Doctor Reynolds, in conference with Hart: "He who believes the words of Christ, in the sense of antichrist, and rejects the sense of Christ and his Spirit, is not a Christian, but is, indeed and in truth, antichristian."

Now, with such sort of persons, christian communion ought not to be maintained, for they who deny the Christian faith, can have no right to the special ordinances of Christ.

Thirdly, If such a promiscuous communion of all professing protestants were both possible and lawful, yet it is highly inexpedient. Now the apostle has determined it, that things which are utterly inexpedient, and such as hinder the edification of the church, should not be practised; 1 *Cor.* x. 23.

The great and evident inexpediency, and the many inconveniencies of such a community, will appear under the following heads:

Section II. *Inconvenience* I. What a most uncomfortable communion would Christians have among brethren and sisters, in the same community of such wild and distant principles, as those ten differences of Christians I have reckoned up under the former question? Read over all their opinions again, and say, how utterly inexpedient is it that these should be united in one church! *What fellowship has righteousness with unrighteousness? And what communion has light with darkness? And what concord has Christ with Belial; or what part hath he that believeth with an infidel? And what agreement hath the temple of God with idols?* 2 Cor. vi. 14—16. For he that disbelieves any necessary articles of the christian faith, we may rank him among the infidels.

Christian communion, in the pleasure and profit of it, consists very much in an union of hearts in constant public worship, in praying occasionally with one another, and conferring together about divine things: But what bonds of charity can unite their hearts, where one justly suspects the other's faith in points of greatest importance? How can they join with pleasure in hearing the same word of God, while their sense and meaning under those words is so extremely different, and contrary to each other, as light and darkness, as God and the creature, as heaven and earth? What pleasure in joining to address the same Saviour, while one believes him to be the true and eternal God, the other thinks him but a mere man? What harmony is there in their joys and praises, while one adores this Redeemer for bearing the punishment of all his sins, and dying as a sacrifice in his stead; and the other, by the same expressions of adoration, only gives him thanks for confirming his doctrine of remission of sins by becoming a martyr for it? What delight can the members of the same church take in conversing with each other, who differ so widely even in things of experimental and practical godliness? While one is relating the power and freedom of divine grace in convincing him of sin, and shining into his heart to give him the saving knowledge of the gospel, in turning his mind from earth to heaven, and changing his whole soul, with all the powers of it, into a divine temper, in securing him from this and that temptation, and over-ruling his spirit to persevere in the paths of holiness; the other believes that divine grace and power has no hand in all this, but what is only providential, by external means and helps; and that this piety is really to be ascribed to the freedom of his own will; and perhaps a third person shall interpose, and say, in antinomian language, "There is no need you should be so solicitous about these lesser matters of freedom from temptation, or the mortification of sin, either by divine grace, or by your own will; if you are but a believer in Christ, and your faith be strong, sin cannot do you hurt, and you shall certainly be saved." What wretched communion in prayer, or holy conference, must be maintained among fellow-members of the same church, whose opinions are so fearfully divided?

Section III. *Inconvenience* II. What an unhappy station must a minister have

amongst such a people? How difficult to fulfil his ministrations of prayer and preaching without offence? Or rather how impossible? Surely the work of a preacher is to explain the Scripture to his hearers; but he can hardly step out beyond the very express words of Scripture, but he breaks in upon some of their darling sentiments: He can scarce comment upon any text, but he opposes the one side or the other of two contrary opinions, and grieves some of the flock: He can hardly speak of the person of Christ Jesus the Mediator, but he offends the arian, the samosatenian, or athanasian: He can scarce express any thing about the redemption and atonement of Christ, but he awakens either the calvinist, or the socinian, to jealousy, and affronts their sacred doctrines: He must not ascribe glory to the Father, Son, and Spirit, lest he displease the unitarians in his assembly; nor must he neglect it, lest the trinitarian take umbrage. He dares not name the word "perseverance," lest the arminian be angry; and if he should talk of "falling from grace," the calvinist trembles, and half despairs. And as preaching would be rendered almost impracticable, unless he confined himself only to mere moral duties, such as Seneca might preach; so all his ministrations in prayer and thanksgiving would be most unhappily perplexed and confined: He must not pray for forgiveness of sins, for the antinomian believer does not want it; nor for almighty sanctifying grace, for the remonstrant Christian knows no need of it: He must not confess original sin, for the pelagian disowns himself guilty; nor dares he mention a word of the imputed righteousness of Christ, or justification by faith alone, lest half the assembly rise in arms against him: Nor must he venture to give thanks for the free electing love of God, lest two-thirds of his church shew a murmuring dissent. Surely there is little left for this man to talk of in his pulpit, but what he may borrow from Plato, Plutarch, or Epictetus.

SECTION IV. To prevent this inconvenience, the patrons of this opinion assert, "That a minister ought not to impose any particular sense on any of the controverted Scriptures in his preaching:" But all his business is freely and fairly to acquaint the people with those various senses of Scripture, in which the different sects of Christianity have contrived to explain it: He must represent the reasons impartially on both sides, and leave them to the judgment of the hearers, "without biassing of them, as one expresses it, by the needless declaration of his own opinion:" And they tell us, "it would be much more edifying to all Christians, if ministers in their public discourses expressly asserted no other things than such as all, who read the Scripture and receive it for the rule of their faith, acknowledge to be certain." To this I reply,

Reply I. What poor food would this be, for hungry and thirsty souls to be treated with nothing else in a christian church, but the mere inculcation of moral duties, or the narration of christian controversies. What support could a weary and heavy laden sinner, bowed down and broken with a sense of guilt, obtain from such a discourse? Must a poor perishing creature, under the fears of the wrath of God, have no relief given it from a just and full explication of the sacrifice of Christ, because the socinian does not believe it? And must a weak Christian, conflicting long with sins and temptations, have no encouragement from the doctrine of inward effectual grace, lest the arminian take offence at it? Is this that way of preaching that Christ has ordained to save guilty and impotent creatures, by a deep silence of the true and only relief, or a mere dubious proposal of it?

Reply II. Besides, how can a minister answer it to God, or his own conscience, if he

sees errors in matters of importance growing amongst men, perhaps in his own church too, and does not attempt to prevent or refute them by his best interpretation of the word of God? Is he not *set for the defence* and confirmation *of the gospel;* Philip. i. 17. Is he not bound to maintain *sound doctrine*, and to teach no other? 1 *Tim.* i. 3. Must not he *contend earnestly for the faith once delivered to the saints?* Jude verse 3. How narrow is the work of a gospel minister, and how much less useful is his labour or his office, if he be forbid this service to Christ and the church?

There were some little points of controversy, in the apostles' days, about the lawfulness of meats, &c. which if they were never determined, would not be destructive to Christianity; concerning these, the apostle at some seasons directs to keep our faith, or opinion, to ourselves; *Rom.* xiv. 22. Yet at other times he bids Timothy preach his own sense of them, and declare for christian liberty, and the free use of food; 1 Tim. iv. 6: *If thou put the brethren in mind of these things, thou shalt be a good minister of Jesus Christ, &c.* Now can we think that Timothy should publicly give his sense in such circumstantial things, and yet not give it in the most important matters of the satisfaction and atonement of Christ, and the doctrines of the efficacious sanctifying grace of the Spirit? Read 2 *Tim.* ii. 14, 15, 18, 23, &c. *Tit.* i. 9, 10, 13, and *chap.* ii. 1, 2, and judge if the apostle requires, or even indulges those young preachers to propose important doctrines in such a doubtful way as may minister questions, and gender strifes; and in such an indifferent manner, as though it was no matter which opinion his hearers embraced: Surely this would be the way to keep men ever learning, and never coming to a settled knowledge of the truth.

Reply III. I might add, in the third place, how can it be supposed, that every minister who has determined his own sentiments in these controverted points, should represent the different senses of Scripture in just and impartial language, so as not to favour either side? Will not his own opinion give a warmth of delivery, or a brightness of expression, while he is representing the reasons of it? And will he not be tempted with a cold and languid faintness, to propose the arguments of those that differ from him? It is utterly as unreasonable to expect such an unbiassed indifferency in his explications of the important points in the word of God, as it is unrighteous to require it.

Reply IV. In the last place I reply, that such a practice as this would kindle contentions instead of quenching them: It would raise perpetual strife in the church, instead of composing it; and by relating the opinions and arguments on all sides, would furnish every warm temper with weapons offensive and defensive, to carry on the controversial war, and fight it out at home. This thought naturally leads me to mention the third inconvenience, of forming such a mixed and motley church.

SECTION V. *Inconvenience* III. This sort of communion would be much more likely to tear itself to pieces by perpetual jangles, disputes, and quarrels, than to maintain peace and unity. Nor could this pretended *bond of peace*, and agreement in express words of Scripture, secure it. Our Saviour has already given a fair decision of this matter, when he assures us, that "a house divided against itself can never stand;" *Matt.* xii. 25. These persons that entertain so different opinions in religion, might agree well enough in the common affairs of life, if they were not joined in one church, and by that means brought constantly to worship together; but when they must hear continually the same sermons, attend the same prayers, and offer thanks to God together in the same words, with different meanings, it is not possible to secure them from awakening their jarring

and contrary sentiments, whensoever any thing relating to those subjects is mentioned; and it is most likely too it will rouse their anger, their contempt, and their uncharitable censures of those that differ from them in points of importance. Thus the proposed band of peace would become a firebrand of perpetual war, till it ended in divisions and desolation.

And this event may justly and reasonably be expected upon the election of every new officer in the church, as often as death, or removal of communion, or incapacity, &c. give occasion for a new choice. Will not each party be zealous to elect a person of their own sentiments, and the church by this means be crumbled into many parties, and divided amongst many candidates? Thus the passions of men will have a strong temptation to exert themselves in wrath and reproaches; nor can any of them be persuaded to yield and drop their own candidates, which might be much more easily done, if the competitors were of the same opinion.

Section VI. *Inconvenience* IV. Such a principle or test of communion might in some few years quite change the ministers and ministrations, the whole scheme and order of a church of Christ, from moderate calvinist or lutheran, to antinomian, pelagian, or socinian, from christian worshippers to antichristian idolators, and from a temple of God to a *synagogue of Satan;* and according to this rule, the church has no power, nor right, to prevent it. Suppose a church of pious lutherans, or calvinists, consisting of thirty or forty members, whereof but eleven or twelve are men; if providentially six or seven of these die in a few years, and six or seven bold antinomians, or socinians, are admitted on the mere profession of Scripture: They become the majority, and consequently the rulers of the whole church; they choose pastors, and appoint ministrations and orders according to their own sense of Scripture; what must all the twenty or thirty original members of the church do, that walked and worshipped many years together in holiness and comfort, according to the doctrine and practice of Luther or Calvin? Must this lesser party of men, and perhaps almost all the women of the church, sit still under such preaching, and such ministrations, as an antinomian, or a socinian pastor would entertain them with, to their weekly public sorrow, and their mourning in secret every day? Or must they quietly depart from the communion of the church, and each of them seek their better edification in new churches where they could find it?

Perhaps also this church might be possessed of many temporal advantages, they might have a fair and well-built place of worship belonging to the community, with gifts or annuities for the support of the ministry and the poor; plate and linen, and other utensils for the celebration of holy ordinances given to the church: Must seven or eight professed antinomians, or socinians, by this means become the possessors of it? And the old members, while they seek their better edification, relinquish their first society and place of worship, and all these temporal possessions, at once, which were given for the sacred uses of that calvinist or lutheran church? And yet they have their own poor to maintain still, who cannot find their edification in the socinian or antinomian worship. Can that be a necessary rule of church-communion, which would thus injure the greatest part of the church, including the women, and rob them all of their spiritual profit, and their outward advantages at once?

The tables may be turned, and the same inconveniencies would arise to a socinian, or antinomian church, by admitting calvinists, or lutherans.

Now if such a sort of mixed communion be impracticable, unlawful, and highly

inexpedient, as I think it is plainly proved beyond contradiction, the question must be determined on the negative side, and all sorts of protestants cannot be members of one particular church.

A very natural question arises here, "Whether no Christians must join in communion, but those that are in all things of the same opinion?" This shall be the subject of my next inquiry.

QUESTION XII.

WHETHER NO CHRISTIANS MUST JOIN IN THE SAME COMMUNION, BUT THOSE THAT ARE IN ALL THINGS OF THE SAME OPINION?

SECTION I. I hope there is nothing that I have said in the foregoing discourses, can be interpreted into so narrow a sense, as to exclude all protestants from the same communion, but those whose sentiments are exactly alike. This would make all communion impracticable; for it will be hard to find two persons in the world, that in every point of religion have the same sentiments: Or if here and there half a dozen, or half a score Christians were found that came very near to each other in opinion, these must every where set up distinct societies by themselves; thus the church of Christ would be crumbled into endless divisions. To this question therefore I answer, in the first place:

Answer I. That as the affairs of the christian world are found in this imperfect state, it seems generally most adviseable for every person to join in constant and fixed communion with such a church, or be admitted members of such a particular christian society, whose public profession comes nearest to his own sentiments, where he can possibly have opportunity to do it; this would lay a foundation for the greatest union and peace among the members of the same church; considering the folly and weakness of human nature, and how much our differences of opinion endanger our charity, certainly this would be the easiest and surest method of answering the design of those apostolical directions and wishes, Rom. xv. 5, 6, *God grant you to be like-minded, that ye may with one mind, and one mouth, glorify God, &c.;* 1 Cor. i. 10, *I beseech you, brethren, by the name of our Lord Jesus Christ, that ye all speak the same thing, and that there be no divisions among you; but that ye be perfectly joined together in the same mind, and in the same judgment.* And in order to shew their general and extensive charity, they may take proper opportunities for occasional communion with other churches that differ from them in matters of less importance; and they should be as ready to admit the members of such churches to the same privilege of occasional communion with themselves. Thus they might maintain the unity of the church of Christ in general, and preserve peace, both abroad and at home, without contention or schism.

SECTION II. But to declare my opinion particularly on this head; I would say, that there are two sorts of persons that ought never to communicate in the same sacraments; and there are three sorts of Christians that need not join as members of the same church, yet may occasionally maintain communion with each other; and I think all other sorts of protestants may hold constant communion together.

The persons that should never attempt to join in the same communion, either constant or occasional, are these:

First, Those that differ in fundamental articles of doctrine or practice, or such articles, as either side supposes to be fundamental and necessary to salvation: For if they can never hope to meet together in heaven upon the principles they profess, I see no reason why they should join in solemn acts of special communion on earth; nor does the holy Scripture require or encourage, but rather forbids it. *What communion hath light with darkness? Righteousness with unrighteousness? The temple of God with idols? And he that believeth with an infidel?* 2 Cor. vi. 14—16.

Secondly, Those that are so widely divided in their opinions about some practical points of worship or discipline, which are necessary to be practised in communicating together, but are utterly inconsistent with each other: Several such I have mentioned in the beginning of the former question; as those that think public liturgies, or singing of psalms, necessary, and those that think them utterly unlawful: Such as esteem episcopal ordination of absolute necessity, and such as believe it to be sinful and antichristian, &c. These cannot hold communion together in special worship, and hardly in the general ordinances of it.

The persons that should content themselves with occasional communion together, are chiefly such as these, *viz.*

First, Those that give evidence of serious piety, but differ in very important points of doctrine, which yet they cannot certainly call fundamental; and especially such points as continually occur in preaching, praying, or other parts of worship, and would frequently disquiet and disturb the devotion of one party, or the other. Such I may suppose the better sort of remonstrants, or arminians, compared with the calvinists, and the better sort of enthusiasts, or antinomians.

Secondly, Those that differ much in the external forms of worship or discipline, which yet are not utterly inconsistent with each other; but if fixed and united in one single community, they might probably occasion frequent disturbances; such are the moderate episcopalians and baptists, lutherans and calvinists, &c.

Those I call moderate, who are not so strict and rigid in their opinions, nor run into such extremes, nor place so great a necessity in their particular modes of worship or discipline; but being persons of serious piety and of extensive charity, they think it proper to omit or alter, on particular occasions, what may be offensive to either side; or at least they allow either side their own particular practices and forms. These may very well unite in occasional communion, though they are fixed members of the churches of their own persuasion. A church that communicates kneeling, may allow communion to one that stands or sits: A church baptized in infancy, or in adult age, may allow communion to those that are of the contrary practice in baptism. A church that receives members upon a stricter profession of inward and experimental godliness, may allow communion to one that has been admitted a member of another church, where the profession of Christianity is more large and general. A church that holds no bodily presence of Christ in the sacrament, may allow communion with one that believes consubstantiation, or that the body of Christ is present together with the bread, &c. Such occasional instances of communion might tend to enlarge the spirits of men into a good opinion of each other, and increase christian charity. But if the want of opportunity to join with Christians of their own sentiments, should call or encourage them to unite as fixed members of the same community, they should agree to some sort of articles of peace, not to disturb the

quiet of that church, by breaking in upon and overturning its old and usual forms of ministration and government: For the peace of the church is more valuable than the amendment of some improper forms, where the life and power of godliness is preserved.

Thirdly, Those that differ in less points of Christianity, but are of unsettled and unsociable principles or humours, and cannot content themselves without shifting from church to church, nor be easy with any that differ from them, without a zealous propagation of their own opinions, contrary to the rules that the apostle has given for the peace of the church, *Rom.* xiv. Some learned writers suppose these to be the heretics in the scripture sense. Surely these should be contented with occasional communion, and they should give satisfactory evidence of inward piety, before they are received to any communion at all.

Now if these three sorts are admitted occasionally to communicate in the special ordinances of Christ, this seems to me sufficient to answer the canons of the apostle, where we are bid "to *receive* such as Christ has received, and that without *doubtful disputations*;" Rom. xv. 7, 8, and xiv. 1. Whereas if they should be admitted to a full and fixed membership, power, and privilege in the same church, without any limitations by articles of peace, that would so much endanger the common edification and peace of the whole body, as to run counter to other canons of the same apostle: *Let all things be done to edification*, 1 Cor. xiv. 26. *Follow the things that make for peace;* Rom. xiv. 19.

As for all other protestants, whose differences are of less moment, notwithstanding they may be very various, and almost infinite, yet if they are of a peaceful spirit, and give evidence of hearty and sincere piety, I think they may join, where they have opportunity, as complete and constant members of the same church, and worship the same God together, through *the same Lord Jesus Christ, by the same Spirit*, and fulfil all duties of christian fellowship to his glory, and their mutual edification.

When any such sort of difficultics happen in relation to the communion of Christians, which cannot be determined by the plain reason and nature of things, and concerning which we have received *no* certain *commandment from the Lord;* the wisest man on earth can go no farther than to say with the apostle, "I give my judgment as one that hath obtained mercy of the Lord to be faithful: I suppose therefore that it is good in the present case to act in this or that manner;" 1 *Cor.* vii. 25, 26. If such a modesty of language became that great man, St. Paul, surely every lesser minister, or Christian, would transgress the bounds of decency, to assume more to himself.

Section III. An illustration on the three last questions.

What I have advanced on these subjects may receive some light perhaps, and may prevail more toward the conviction of my readers by an illustration of these cases by a parallel instance, taken from a society of philosophers: For when the same case is put in new subjects of another kind, it does not meet with the same predetermined judgment, as in subjects that have been long controverted.

Suppose several stoic philosophers join in a society, and have weekly lectures read to them, by one or more professors whom they have chosen, and once a month hold a feast, wherein some peculiar ceremonies are performed to the honour of Zeno, the master and founder of their sect. Every person that is admitted to communicate in their feast, must profess himself a stoic philosopher, a follower of Zeno, and to receive the precepts of Zeno for his principles of doctrines and practice; and he ought to give satisfaction,

by conference, to the members or professors of this stoical society, that he owns Zeno's precepts, and that in such a sense as is sufficient, in their judgment, to make him a good stoic.

Now if any one shall mingle some of the doctrines of Epicurus therewith, or expound Zeno so as to make happiness consist in sensual pleasures, this overthrows the stoical doctrine, which makes happiness to consist in wisdom and virtue; and such a one cannot be admitted to any communion with them in their festivals, constant or occasional.

But if any person shall mingle much of platonism, or pythagorean philosophy with the stoic, and expound Zeno, in some part of his doctrine, in the sense of Plato or Pythagoras, perhaps he may be invited and admitted as a guest at the stoical feast, and so hold occasional communion with them; because he is truly a stoic, though a favourer of other sects. His notions are not ruinous and destructive to the most valuable principles of stoical philosophy; though he differs so much, that it would endanger that particular stoical society, if this person were received as a stated member to all the powers and privileges thereof.

But as for others who hold the stoical doctrine, though one expounds it according to Epictetus, another believes it in the exposition of Antoninus, another in the exposition of Seneca, who were all stoics, these may all be admitted to constant communion, and as members of the same society; for the great ends and designs of their society are hereby promoted and secured; their several differences are but small, and very consistent with the cultivation of stoicism, and the benefits of the society.

In short, those who hold so little of Zeno's precepts, in the sense of the society, as neither to be consistent with its being, nor well-being, must be excluded from all communion with it; such are Epicurus and Democritus, even though they should subscribe all the words of Zeno.

Those who hold no more of Zeno's precepts, in the sense of the society, than is just consistent with the being of the society, but may naturally prove fatal and ruinous to the well-being of it, should be admitted only to occasional communion; such are those who admire Plato and Pythagoras, and mix their directions with the doctrines of stoicism.

Those who hold so much of Zeno's precepts, in the sense of the stoical society, as to be consistent with the being, well-being, and edification of the society, may be admitted as fixed members thereof, and be entitled to all its powers and privileges; such are the followers of Epictetus, Seneca, &c.

I hope such sort of parallel instances may give some light and direction in these affairs of communion among Christians: Yet these things being not exactly delivered in the word of God, nor particular rules about them determined clearly in Scripture, it is evident that our Lord Jesus Christ intended that the light of nature and reason, the common principles and rules of order and society, and the most prevailing prospect of holiness, truth, and love, should determine our actions in such cases, still keeping close to every thing that he has revealed, so far as we can find his will in Scripture; and in all other things making the best use of our christian prudence and charity, for the glory of God and the good of men, 1 Cor. xiv. 40, 33, *Let all things be done decently, and in order, for God is not the author of confusion, but of peace, as in all*

churches of the saints. 1 Cor. x. 31, 32, 33, *Whether therefore ye eat or drink, or whatsoever ye do, do all the glory of God. Give none offence, neither to the Jews, nor to the gentiles, nor to the church of God: Even as I please all men in all things, not seeking my own profit, but the profit of many, that they may be saved.*

Since it is impossible in this imperfect state, that any thing in civil or religious affairs should be free from imperfections, those methods must, at all times, be esteemed the best, that aim at the best ends, and are attended with the fewest inconveniencies; 1 Cor. x. 23, *All things* that *are lawful,* are *not expedient; all things* that are lawful *edify not.* Rom. xiv. 17, 18, *The kingdom of God is not meat and drink, but righteousness and peace, and joy in the Holy Ghost. He that in these things serveth Christ,* with a humble sincerity of heart and design, *is acceptable to God, and approved of men,* even though he should not always hit upon the most prudent means.

But let peace and edification be ever in our eye, as our chief ends in church-affairs, according to that great canon of the apostle; Rom. xiv. 19, *Let us therefore follow after the things which make for peace, and things wherewith one may edify another.* Amen.

DISCOURSE I.

A PATTERN FOR A DISSENTING PREACHER.

JOHN VII. 46.

THE OFFICERS ANSWERED, NEVER MAN SPAKE LIKE THIS MAN.

THE jewish church was grown very corrupt when our Lord Jesus Christ was sent into the world as the Reformer of his people, and the Saviour of mankind. The rulers of the church hated reformation, and would not suffer any thing to be altered in their establishment. Therefore their rage against our Saviour rose high, and the *pharisees and chief priests sent their officers to seize him*, as you find in *verse* 32; to seize Jesus, the best preacher that ever spoke in the name of God to men: They sent men to silence him in the midst of his sermon, to summon and constrain him to appear before them. The chief priests were the highest ecclesiastical governors, and the pharisees were a set of men that applied themselves to the study of their law and their worship, and separated themselves from the rest of the people, under a pretence of greater holiness. These jewish clergy, and jewish devotees, joined to send their servants upon this wicked errand to lay hold on Christ the Lord. The persons that were sent, are called *officers* in my text: Probably they might be some ecclesiastical officers that belonged to their courts, because we find that the priests had power over them, and they gave them commission for their work, though we are not acquainted with their particular title.

But when they came and heard *the gracious words that proceeded from his mouth*, his sublime doctrines of truth and mercy, and his kind invitations to thirsty sinners to receive *living water*, as you find in a few words before my text, they were astonished and struck silent; they were inwardly restrained from executing their impious commission; they returned to their masters without having done their work: And when they asked them the reason why they had not brought the preacher with them, they boldly replied, that their consciences withheld their hand from him, for *never man spake like this man.*

To improve these words to our present advantage, we shall consider,

I. What difference there was between our Lord's ministry, and the preaching of other men in that day.

II. What different effects it had on those that heard him.

III. Draw some inferences for our instruction, and some for our practice.

I. We shall consider "what difference there was between our Lord's ministry, and the preaching of other men in that day."

It is very likely these officers had been wont to hear the sermons of the scribes, and the doctrines of the Jews in their synagogues, where *Moses and the prophets were read every sabbath*, and generally expounded to the people; but there was something in the matter of these discourses of our Lord, something in the manner of speaking, but much more in the peculiar power attending the words, which made these officers conclude, they had never heard such a preacher in all their lives.

1. First then, there is something in the matter of his preaching different from what those ecclesiastical officers had been used to hear. Though both Christ, and the scribes and pharisees, all pretended to take the Bible for their text, yet there was a great variety in the subjects which they enlarged upon, and the substance of their discourses. They expounded the same moral law which our Saviour did, but it was in so poor and trifling a sense, in so strange and unreasonable a manner, so far from the spiritual design and divine meaning of it, that our Lord found, when he came into the world, he had need to go over it all again with a better comment, lest *the blind should lead the blind, and both fall into the ditch.*

They set forth their sense of it in so gross and carnal an exposition, as though all the commands forbid nothing else but external actions of sin, and required nothing else but the outward performance of duty; whereas our Lord Jesus Christ makes it appear to them, by convincing reasons, *Matt.* v. that "he that breaks one of the commands of God but in thought, he is counted a breaker of the law in the sight of God" the infinite Spirit, before whom our thoughts and intentions of mind, and all the motions of our hearts, are esteemed as our actual performances.

They expounded away the law of God indeed, and they lost the beauty, the power, and the perfection of it, by their comments. Our blessed Jesus came to restore it again. They made holiness to be a very little thing, and an easy matter; whereas our Lord shews, "it is exceeding hard to enter in at the strait gate," and there needs labour and pains to travel onwards in "the narrow path" that leads to heaven.

Again, they dwelt much upon the ceremonial part of their religion, with too great a neglect of the moral part of it; but Christ insisted much upon the more substantial and *weighty matters of the law, righteousness and truth, piety and love.* The pharisees, who were devotees of their church, were careful to *pay tithes of mint, anise, and cummin*, and doubtless their priests were not backward to preach it; but our Lord Jesus Christ makes it his more constant care, and his perpetual business, to establish them in the spirituality and perfection of the moral law of God, and touches very little upon ceremonies, for he thought the scribes and pharisees did that sufficiently of themselves.

Again, they insisted upon the traditions of the fathers, and councils, and inventions of men; Christ, upon the commandments and words of God. And when any point of doctrine, and especially when any point of practice was in dispute, their recourse was to the fathers; what do the traditions say, what say the ancients? But our Lord Jesus Christ refers them still to some part of his Father's word, and quotes a text, either to prove a doctrine or a duty.

Thus the teachers of the established church, in that day, instructed the people to build their hopes of heaven upon their natural birth, upon their relation to Abraham, and upon their passage through that original ceremony of circumcision, whereby they were initiated into the jewish church, and thought they were made sufficient members of it for eternal happiness. Our Lord Jesus taught them to build their hopes, rather upon

regeneration, upon faith and repentance, upon the inward and mighty change of their souls, upon an alteration of their whole nature, and a turn of their hearts toward God, upon a humble confession of sins, and a dependence on the forgiving grace of God. In *Matt.* iii. we have a particular account what it was the pharisees taught them to build their hopes of heaven upon, *viz.* their being "children of Abraham;" and John the Baptist, who was the forerunner of our Lord, cuts off that hold; he nullifies that foundation, and makes it vanish. *Think not to say within yourselves, we are children of Abraham, but bring forth fruits of repentance,* verses 8, 9. And Christ, in *John* iii. 3, 5, shews, that if a man be not *born again,* let him pretend never so much to a birth of the family of Abraham, and to his passage through the initial rite of circumcision, the ordinance of that day, it was in vain for him to hope *to enter into the kingdom of God.*

They preached up the doctrine of justification by their own works, for *the pharisees trusted in themselves that they were righteous;* Luke viii. 9; and in their opinion, whoever would follow the rules of the pharisees, must be righteous, as well as they, in the sight of God, and thus go to heaven upon the foundation of their own duties. But our Lord Jesus Christ continually shews men the imperfection of their own righteousness, and their utter insufficiency to perform any obedience, for which they might be accepted of God to eternal life. He preached the gospel of salvation by the mercy and forgiveness of God his Father, and gave hints of his own atonement for sin, and his mediation with God, as far as was proper in that day and time.

They taught the people implicit faith in their doctors, or teachers, and governors, and that they ought to believe as the church believes, not allowing too nice an inquiry into all the particular grounds of it. This evidently appears, by the reply that these officers received from the chief priests; for when they acknowledged that "our Lord Jesus spake as never man spake," the priests were ready to reprove them for giving too much credit to such a preacher as Christ was: What! Do ye believe? *Have any of the rulers, or of the pharisees, believed on him?* John vii. 48, 49. And will you dare hearken to a preacher, and doctrines, that the rulers and pharisees reject and renounce, and never gave you encouragement to depend upon? So the man that was born blind, *John* ix. when he argued with them, that "surely he must come from God," that could cure one that *was born blind,* and restore him to sight again; *Thou wast altogether born in sin,* say they, *and dost thou teach us?* verse 34. *And they* excommunicated him, or *cast him out.* But our Lord, when he preaches to the multitude, he bids them all *search the Scriptures; these are they that testify of me;* John v. 39. *If I speak not according to* the language of divine revelation, and *the word of God, believe me not;* I stand or fall by that test. Thus you see, in numerous instances, notwithstanding our Saviour, and the scribes and pharisees, would all seem to take the Bible for their text, yet how very different the matter or subject of their discourses were.

2. There was something in the manner of his preaching, that was different from the doctors of the jewish church, as well as in the matter of it. Whether the Jews affected any pomp of oratory, or studied periods, as the Greeks did, is hard to say; but it is certain, that our Saviour used the plainest and most simple style, that every one could understand: Our Lord conveyed the doctrines of the gospel to men, in such a manner, as was most suitable to attain his sacred purposes. Sometimes he spoke in parables, but with this design, to cover under them such *mysteries of the kingdom* of heaven, as were not fit to be divulged in their full brightness and light at that day.

Few of the jewish teachers preached from their hearts, when they preached pure and strict religion, for they practised very little of it. But our Lord never preached up any part of virtue or piety but what he practised. Nor, when they insisted upon traditions and ceremonies, did they always perform them; for our Saviour complains, "they laid heavy burdens upon the people, which they would not touch with one of their fingers," *Matt.* xxiii. 4. But our Lord Jesus Christ preached with the greatest sincerity, for he believed what he taught, and practised what he required.

They preached in a cold, dull, and insipid way, as they must do, because their hearts were not in their work. But our blessed Lord, had doubtless a solemn and awful air of unfeigned religion on his face, and piety and goodness sat on his countenance, while the words of truth and salvation were poured out from his lips. He taught the things of God to the people, as one that had zeal for God, and a tender and compassionate concern for the souls of men; his zeal appears sufficiently in the actions of his life; John ii. 17, *The zeal of thy house hath eaten me up*, it wasted his natural spirits. How warm was he in reproving sin, even the sins of the rulers and priests of the church in that day! How kind and melting was his language, in inviting sinners to repent and return to God! How large his promises of pardon, in the name of God his Father; *All manner of sin and blasphemy shall be forgiven to men!* Matt. xii. 31. How moving are his exhortations to faith and hope in himself! Matt. xi. 28, *Come unto me, all ye that are weary and heavy laden, and I will give you rest.* Come and *take upon you my yoke* and my burden, *for my yoke is easy, and my burden light. Come* and *learn of me*, practise what I preach, and imitate what I do.

The scribes taught by way of exposition, and poor expositors they were of divine revelation; and probably they never enforced holiness on the conscience with solemn and pathetic words; Christ spake with *authority*, as one that came from God, clothed with power: Matt. vii. 28, 29, *The people were astonished at his doctrine, for he taught as one that had authority, and not as the scribes.*

3. Not only in the matter and in the manner of Christ's preaching there was some difference from that of the doctors of the age; but, thirdly, there was more difference between his preaching and theirs, in the power that attended his sermons, for God was with him. But the jewish church was grown so degenerate, that, though God himself did once establish it, yet now he had almost left and forsaken their priests and their teachers. There was an evidence and demonstration of the Spirit, that attended the words of Christ inwardly to the hearts and consciences of men. Therefore Christ could say concerning his preaching, *the words that I speak unto you, they are spirit, and they are life;* John vi. 63. "The Spirit of God was given him without measure," as John the Baptist confessed concerning him, *John* iii. 34. "The Spirit of the Lord was upon him, the Lord had anointed him to preach the glad tidings of salvation to men, to unbind the captives, and to bind up those that were wounded and broken in heart," as in *Luke* iv. 18, which he himself cites from the prophecy of Isaiah, which was spoken of old concerning him. "The Spirit of the Lord was upon him," and went with his words, that made the officers acknowledge, "never man spake like him;" for they had been used before to a preaching without the Spirit, a preaching where the Spirit of God was hardly found: And when they came to a preacher with whom God was, no wonder they confessed something different between him and them. Now this power, this secret power, that attended the ministry of Christ, had various remarkable effects upon the hearers, which leads me to

II. The second general head proposed; that is, "what were the effects of the preaching of Christ, whereby it is further differenced from that of the jewish doctors?" And in this part of my discourse I shall range all my thoughts under these three heads: The effect it had upon the multitude; the effect it had upon his own chosen ones; and the effect that it had upon his enemies.

1. Let us consider the effect that his preaching had on the multitude. It amazed them, it gave them uncommon surprise; Matt. vii. 28, *The people were astonished at his doctrine.* They wondered, not only at his miracles, whereby he confirmed his sermons, but at the sermons themselves. We have a very particular account of this in Mark vi. 2, *Many that heard were astonished, saying, Whence hath this man these things?* It set many of them upon the inquiry, and upon a search of heart, what all this his doctrine might mean, and what they had of concern in it? They began to debate the case with themselves, whether he came from God, or no; and whether this was *the Christ*, or no? There was no such stir among the people while they attended upon the common sermons of the scribes, and the teachers of the jewish church. They came back as they went, they sat unconcerned and unmoved. They heard the oration and the performance, they seemed perhaps to be pleased with some of those that pronounced better than their neighbours, and they went away unimproved, unless in uncharitableness against the followers of Christ, the new preacher, and in zeal for ceremonies, some of which also God had not instituted: These were the improvements of the church of the Jews, that attended upon the common preachers of that day.

When a nation had been a long time buried in ignorance and darkness, and been kept under by the sovereignty and policy of priests, and there springs up a new teacher among them, with some characters of divinity about him, they are all awakened and set upon the inquiry; they see the difference between their own dull hypocritical teachers, and the new spirit of piety and devotion. They never before troubled themselves about inward religion, but now there is a public open acknowledgment of something uncommon, and they are willing to consider, whether it be divine or no. Such was the case of the Jews when our Saviour was sent among them; such was the time of the reformation of this nation from popery; and those that taught the gospel of Christ in that day, in opposition to the popish religion, were called new teachers, "as in Bishop Burnet's History;" their ministry was very different from that of the romish priests and friars, and people were set upon the inquiry, for God opened their eyes; their doctrine was according to the gospel, their form and manner of preaching was warm and zealous, practical and experimental, and the Spirit of God was with them.

This is therefore the first effect of the ministry of Christ, and will be the natural effect upon the multitude, when a divine preacher, that is distinguished from the common indolent teachers of the times wherein he lives, shall be called of God to preach in his name to sinners, for the salvation of men.

2. Let us consider the effect that the preaching of Christ had upon his own chosen ones. It wrought a mighty and wonderful change upon them. Some of them were great and grievous sinners, and they were converted into saints. Some of them loved the world too well, but afterwards they loved God and Christ above all, and renounced this world, in the hope and pursuit of a better. Mary Magdalene, who is represented as a vile wretch, comes and sits weeping at the feet of Jesus, acknowledging her sins, she receives large forgiveness, and loves her Saviour much; *Luke* vii. 38, 47. Behold her

now humble and mourning, in a quite different frame, form, and temper, than what before you might have beheld her among the crowds of lewd persons. Zaccheus the publican, behold he distributes his goods to the poor, and restores fourfold to those whom he had wronged by his former violence; he comes and waits as a disciple of Jesus, receives this new doctrine, and accepts the salvation; *Luke* xix. 8. There was a power that attended the preaching of Christ, whereby they were effectually persuaded to give up themselves to his conduct. Matthew forsakes the receipt of custom, where perhaps he got many an unjust penny, to follow our Lord Jesus Christ, and abandoned his gainful office. Peter, Andrew, James, and John, left their nets and fishing-boats, and followed the Lord at his call. Those that were ignorant were made learned in the truths of God, in the law and gospel. *The poor* of the people *received the gospel* and divine grace, and sinners were converted, sanctified, and saved. Sublime and saving truths were they taught by the Father, under the preaching of Jesus his Son. *For flesh and blood did not reveal these things* to them, *but my Father which is in heaven*, says our Lord; *Matt.* xvi. 17. Now there were scarce any such instances at this time under the preaching of the jewish doctors, because the Lord seemed to have left them; and their hearers being trained up in a formal and customary round of ceremonies, which they took to be true religion, they went on in a blind hope of the favour of God, because they were Abraham's seed; but there were very few instances of conversion and regeneration under all their ministry.

3. Let us consider the effect that it had upon the enemies of Christ. It is evident that it convinced almost all of them inwardly, and many of them in their discourses with Christ were reduced to silence and shame; they had not one word to reply. They went away, *not daring to ask him any more* ensnaring *questions*, for their mouths were stopped; *Matt.* xxii. 46. The most impudent and the most learned of them fell together under his reproof, and the repetitions of the doctrines from his mouth they could not sustain.

Some of his enemies, who heard his discourses, had their tempers a little softened towards him; those that designed to apprehend him, and went with that design, were inwardly restrained from touching him. So the officers in my text. Others again rose into a violent rage and envy, that their corrupt doctrines and their evil deeds were brought to light, and exposed before the people, and they hated him with more rancour, and pursued him even to the death.

III. I proceed now in the last place to make some inferences for our instruction, and for our practice.

We will begin with lessons of instruction.

Lesson I. And the first is this, "that men may preach without commission from a national established church, and yet be owned of God." Such was the case of our Lord Jesus Christ in my text, and God discovered to the world how far he honoured him. Christ appeared like an upstart, without a commission, for he was not sent forth from any of the schools of the prophets, nor from under any of their public forms of teaching: Therefore they say concerning him, *As for this* man *we know not whence he is;* John ix. 29. He was looked upon as a schismatic in those days, as a sort of separatist from the established church, and all those that followed him were opposed under that pretence. It was thought a sufficient refutation of his commission to preach; *Have any of the rulers, or of the pharisees believed on him?* John vii. 48. But God sent a divine

testimony into the hearts of those that heard him, and made them cry out, *Never man spake like this man.* It is no matter whence he comes, says the man who felt his power opening his eyes; it is no matter whether he has authority from you, or no; for his miracles and his doctrine give sufficient attestation to his character and his divine authority. When Peter and John, after the death of their Master; proceeded to publish the same doctrine which Christ had done, how were they railed at, and how furiously persecuted by the rulers of the Jewish church! But God was with them, and by their ministry he converted thousands. Look into Acts iv. 17, 18, and following. *Let us,* say the rulers of the Jews, *let us straitly* charge and *threaten* these men, *that they speak to no man henceforth in this name.* There were *Annas and Caïaphas, John and Alexander, kindred of the high priest,* with the *rulers, elders, and scribes,* as you find in the fifth verse,—and they summoned these new preachers to appear before them, and *commanded them not to speak at all, nor teach in the name of Jesus: But Peter and John answered and said, Whether it be right in the sight of God to hearken to you more than to God, judge ye; for we cannot but speak the things which we have seen and heard,* verse 19, 20. We that have had in our own souls a rich and divine experience of the power of these doctrines, and of this gospel, which we preach; we have such a divine testimony to the truth of them, that we cannot but publish them, whether you command or forbid us. God owned them with power, when they had the private house *shaken, where they were assembled together,* verse 31; *they were all filled with the Holy Ghost, and all spake the word of God with boldness.* Let us not therefore suffer ourselves to be imposed upon and terrified with the frightful name of schism, for our Lord Jesus Christ, and his apostles, had the same reproach. What if we do not worship according to the prescribed forms of those that are in power, yet if we worship according to the rules established by our Lord Jesus Christ, we can vindicate our consciences to him, and our consciences will not charge us another day, nor will our Lord reprove us. We have the example of our Lord Jesus Christ, and his followers; let us keep close to this pattern, and not be afraid.

Lesson II. We may learn from hence "the distinguishing power of the Spirit of God when it accompanies his own word," that it reaches the hearts of some with powerful convictions, while others remain obstinate. Some say, *he deceives the people,* and *some would have laid hands upon* him, as in the verses before my text; but these officers were so struck with his doctrine, that they could not do it. The grace of God that attends his own word is sovereign, and delights with glory to distinguish itself amongst the hearers: Sometimes servants are convinced and wrought upon with mighty efficacy, when masters shall remain ignorant, and stupid, or be provoked to wrath and enmity against the preacher. The rich may blaspheme, while the *poor receive the gospel.* The rulers say, that he was *a deceiver,* but the officers, their servants, were satisfied there was something divine in his doctrine, *for never man spake like him.*

There are some, it may be, that go to the place of public worship, and hear sermons, in order to revile the doctrine and religion, and perhaps with a spiteful intent to do some mischief to those that publish it; but Christ shall over-rule them to gain good by the sermon, and turn their curse into blessing. These officers came probably with wrath in their hearts, and with a design to revile Jesus, and lay hands on him, according to their orders; but they were constrained to turn away from him with innocent hands, and they

fulfilled not their mischievous designs. There have been such examples in our days, when wicked men have come to blaspheme God and the gospel in his ministers, and to strike our Lord Jesus Christ through the sides of the pure professors of his faith and worship, and they go away believers; then is that glorious prophecy fulfilled, Isaiah lxv. 1, *I am found of them that sought me not.* And blessed be God that such instances are found in our assemblies, wherein our Lord Jesus Christ makes his divine power appear, and attests his gospel, according to our ministrations of it.

Lesson III. I infer also from this text and discourse, that "when God resolves to work by his Spirit with his word, he breaks through all oppositions and prejudices of every kind, and constrains the hearers to confess, as well as believe." The divine conviction strikes like lightning through their hearts, and commands their lips to acknowledge the presence and power of God there.

Now I shall exemplify this head by considering the particular characters of these officers, and survey what difficulties, and what prejudices they laboured under, when they came first to put themselves under the preaching of Christ, and we shall find this inference eminently true.

They were educated under the jewish priests, and doubtless they had their heads full of notions concerning a glorious Messiah, and they wished for nothing more than to bear some considerable office in the kingdom of that Messiah, if he should appear in their day; and this is not at all strange, if we reflect that this was the very mistake and the temptation of James and John, who were two apostles. But when they heard Christ preach, they must probably fall under convictions of a different kind, and be sensible his kingdom was spiritual: For he wrought powerfully upon their spirits, and seemed to give them another turn of mind, they confessed and acknowledged, though he was mean in his appearance, and his character in the world was contemptible, though he carried nothing of greatness and magnificence with him, he might be the true Messiah, for they were sure never any man spake like him.

Again, they were supposed to be enemies in their hearts to Christ before they came; but when God and his grace was with them by the mouth of his Son, they felt their error, they were forced to acknowledge it, and they became his friends; and instead of delivering him up to the fury of their rulers, they screened him from their rage and violence, and let him go in peace.

They were under the dictates and authority of the high priest and pharisees, and yet how glorious was the power and victory of the gospel over their spirits! They dared to disobey their lords and masters in this unrighteous command, to let go the man whom they sent for as a heinous criminal. As they were under a direct command to seize the Lord, so they were in danger of severe reproaches, and being turned out of their places, and perhaps of excommunication too, if they did not fulfil their orders: But the power which came with the word of Christ gave them courage, and they told their masters, they dared not seize such a man, a man that preached at that rate, so as never man preached.

Now when they not only had the obstacles and prejudices of their own irregular notions, founded upon a long course of education, but were enemies to Christ in their hearts, and were under authority to lay hold of him; yet the power of God, in the mouth of his Son, brought them to confess there was something extraordinary in him, and to tell their rulers so too. All this gave a noble testimony to the mission of Christ.

Such sort of witness God was pleased frequently to give to the gospel of his Son, in the lips of his apostles and his inspired preachers in primitive times. Men who have come into their assemblies, ignorant of the gospel, and disbelievers of Christ, have been convinced and judged by the words which they heard, "the secrets of their heart have been manifested, they have fallen down and worshipped God, and confessed that God was in the midst of them of a truth;" see 1 *Cor.* xiv. 24, 25. Some appearances of this kind have been also seen in our day, and among our fathers in their public labours; and perhaps as many mighty prejudices, and as great obstacles have been broken through by the almighty power of the word of God, in the lips of his ministers, who derive not their authority from the state. Such instances give a divine testimony to the words of the gospel which are published, though the preachers are not commissioned by the national establishment. If God gives us his seal in such a powerful manner as this is, we will believe our authority is from God, and not question our commission.

Lesson IV. I infer, that the "first work of God upon the consciences of natural and carnal men, is very surprising to them."

The officers seemed to be under astonishment, and cried out, *Never man spake like this man.* Perhaps they were never under a sermon before, where the Spirit of God attended it, or where their consciences were in any measure awakened. And thus it is in our days, when persons are under the first conviction of sin and righteousness by the preaching of the word; they confess they never heard such words before.

Though the matter and the manner of Christ's preaching was very different from that of the scribes, yet I take the biggest reason of the exclamation of these officers to be the attending power of the Spirit working upon their consciences. So poor sinners, that have long sat under a formal and cold ministry, and attended twenty years or more upon it, because they were afraid to change their preacher, afraid of some terrible names of frightful reproach, and afraid lest they should change their worship to the name of schism, when they have ventured to go astray into some private worshipping assembly, and have heard a discourse whereby they have been awakened to see their sin and their danger, and the way of salvation by the righteousness and the grace of Christ, they are brought as it were into a new world, they are amazed at what they see and feel, they say within themselves, "Is this the gospel of Christ? Then I never knew the gospel till this day." Such persons, under the first powerful impressions of God on their hearts, are so surprised, that sometimes they hardly know, whether it is the voice of God, or man; like Samuel, when he was first called to be a prophet, knew not the voice of God. They are amazed like the woman of Samaria, when she met with our Saviour, John iv. 29, *Come, see a man who told me all things that ever I did. Is not this the Christ?* Under such an amazement have stupid and ignorant creatures fallen, when they have been first awakened to see the state of their own souls, and the salvation of the gospel in a powerful and converting light, that they have wondered at the preacher, as though he were some extraordinary person, when perhaps his talents were not uncommon; but the Spirit of God was with him, and commanded divine light to shine into the darkness of their souls, and at this they have been surprised, and been ready to cry out, *Never man spake like this man.*

But I shall insist no longer on these heads, but proceed to some inferences for our practice.

Inference I. First, I would draw an inference that concerns ministers who have not

commission from a national church, "that they should see to it that they have a call and a commission from God, and imitate our Lord Jesus Christ in the discharge of it." It is not my business here, my text does not naturally lead me to it, to inquire into all the particulars that make up the call and commission of a gospel minister; but it is the business of each of us, when we are well satisfied in our call to the ministry, to imitate this glorious preacher Christ Jesus. Let us set before us his example, who had received no orders from the jewish priesthood, especially when we are among a people, who think we are not called to preach, because we have no ordination from an established church.

In general we should avoid those things in our ministry, wherein we have just reason to fear others have been mistaken, and for which God hath contended with them, or departed from them. Not that we should seek after something novel, and out of the way, on purpose to avoid their method, or reject any thing in the course of our ministry, merely because they teach or practise it; this would be highly irrational and improper. But when we find their matter of discourse, or their method of ministration hath been unblessed of God, or unsuccessful for the good of men, we have reason to see and inquire, whether there is not a more proper way of preaching to attain the great ends of the ministry, even the glory of God, the honour of Christ, and his gospel, with the conversion and salvation of poor sinful souls. This was the practice of the Son of God when he became a preacher among men, and let him be our pattern.

If others, therefore, in the matter of their ministrations, insisting much on the moral law, have given too narrow explications of it, and have not informed the people of the spiritual perfection of it; let us preach it up in the perfect purity of its demands, and in the severity of its threatenings; let us imitate our Lord Jesus Christ, and publish this holy law in its spirituality, and its terrors, to awaken, convince, and persuade men. If others have insisted most upon the ceremonies of worship and established forms, and endeavoured to bind down the consciences of men to their inventions, or to the traditions of their fathers, which God never approved of, let us insist upon the command of God alone, and upon those rites and forms of worship only which he hath instituted: If others have preached up the sufficiency of baptismal washing, instead of regeneration by the Holy Spirit, and led their hearers to a false presumption that they are born of God, because they have been baptized, let us follow the doctrine of the blessed Jesus, who requires every "man to be born again, to be born of the Holy Spirit, as well as of water," and to be made *a new creature* in heart as well as in life, in order to *enter into the kingdom of God.* If we have found that others have been cold and indolent in their ministrations, and have been greatly defective in their zeal for God, if they have had too little concern for the souls of men, and too great an indifferency for the salvation of perishing sinners, let us double our zeal, let us be more earnest in labouring to save sinful creatures, and to bring saints nearer to God, and to build them up in faith and holiness. If we should have reason to fear the Spirit of God is much departed from others, let us cry with great earnestness, that the Spirit may never leave our assemblies, and abandon us to labour in vain without his influences. Let us long for the presence of that Spirit in our secret studies, as well as in our public ministrations of the gospel, which alone can make a Paul, or an Apollos, to plant and water with success.

And this may be a way, not only to do more service to God, and do more good to

the souls of men, but this may be a means, in the providence of God, to secure us from the rage of men too.

Let us remember, that when the chief priests, and rulers, and pharisees, sent to apprehend our Lord Jesus, for preaching such doctrine as he did without their commission, the officers who were sent, were impressed in their consciences with sudden convictions under his sermon, and they would not seize him. And God may give such instances of deliverance, as divine attestations to our preaching, if we keep close to the example of our Lord Jesus, and have much of his Spirit with us.

Inference II. The next practical inference is addressed to those who attend such ministers as have no commission from the established church: If ye have found spiritual edification from our labours, you may be encouraged to proceed. Such were many of the people who attended on the sermons of Christ, *in the days of his flesh.* They were sufficiently vindicated in this their following after him, not merely by the miracles that he wrought to prove his divine commission, but by the convincing, converting, and sanctifying influence which accompanied his preaching. Let this appear in your whole conversation, in order to vindicate our ministry, and your attendance.

Was it said, even by the officers of the ecclesiastical court, concerning him, *Never man spake like this man?* Let it be said by all the world concerning you, "Never men lived better than you do." Let it be acknowledged in the eyes even of all those that hate you, that the lives of none of them are comparable to your lives for strict holiness and religion. And this will give a conviction to the hearts of men, and go a great way to justify your preachers, and your attention to their sermons. This justified the officers to their own consciences, in their neglect to seize Christ the Lord, though they could not learnedly make out his commission: Nor could they give, it may be, a very rational account of the preference of Christ to their national and established preachers, yet they could say, We have felt something in our hearts from this man's preaching, that we never felt from the preaching of other men; therefore we could not seize him, we durst not apprehend him, we believe he hath something divine in him.

It may be, many of you know not how to argue upon the reasons of your separation, or nonconformity, but if you feel such inward evidence in your hearts, and if the evidence witnesses also in the holiness of your lives, and runs through all your conversation, if you have felt in the sermons of those that are not commissioned, some divine influences that you never felt elsewhere, then you will say, *These are the servants of the most high God;* and without any particular reflections upon the public church, or the public way of worship, you will have abundant reason to keep close to those teachers where you have felt conviction and sanctification under the word.

When it shall be inquired, *What do ye more than others?* Let there be a fair and glorious answer ever at hand, that is legible in your lives by all mankind; let the grace of God in your heart, and abounding virtue and piety in your lives, speak for you, that you attend upon men who do not preach as others do, and that you are made to live such lives as others do not live. Let your christian government of yourselves in sobriety, in temperance, in abstinence from the lusts of the flesh, in mortification to this world, and deadness to the vanities of this life, plead for you and for your preachers. Let it appear you are taught better than others by your living better than the rest of men, in faithful, just, and merciful behaviour towards your neighbours, in strict honour and honesty, in purity of life, in innocency and usefulness among your fellow-creatures.

Let it appear that you bind yourselves to the rules of morality and piety, stronger than others do, even by the death of Christ, and the love of God in Christ Jesus, whose sacred name as a Mediator, a ruler, and a divine pattern, is ever dwelling on the lips of your preachers.

O never let it be said concerning you, that you are ready to cheat in your traffic, that you are apt to deal deceitfully in your merchandize, and you are prone to outwit others, and to undermine them in the management of your secular affairs. Never let it be charged upon any of you in your trades, that you screw down the seller, and strain up the buyer, to extravagant and unreasonable prices for your covetous and exorbitant gain. But let all be open and generous, plain and simple, without fraud, and without extortion; such as may honour the gospel of our Lord Jesus Christ, and give a character of honour too, to that ministry upon which you attend, since it has not national and established ordinations and honours. Let your carriage towards God in your secret worship, and your public attendance upon divine ordinances, be of a piece with your conversation in the world; let it be known by the heavenly and holy temper of your spirits, that you *are the sons of God*, that your hearts are renewed, your souls are changed from what they were by nature, and your lives are gloriously different from the lives of others, and thereby give honour to the gospel that is preached among you.

This will enable you to bear the reproaches of schism and separation from a national church; but how can you bear them, if you have not something that carries you above these reproaches? Can you be content to be as loose, as vain, as careless in your manners towards God, and towards your neighbour, as others are, and yet to give yourselves all the trouble of separation from them in worship, and bear the reproaches of this separation? This is not acting wisely, it will not quit cost; here you run a certain risk, and yet you lose all the profit you might hope for. If therefore you choose to attend upon such a ministry as has not the public commission, let it be said concerning you, "No men live like these men;" that even those that avoid and fly from your assemblies, and who never have heard your ministers, may yet be able to infer from your lives, that "other men speak not as these men speak." Amen.

DISCOURSE II.

A SERMON PREACHED AT THE SEPARATION OF TWO DEACONS TO THEIR OFFICE.

1 TIM. iii. 13.

FOR THEY THAT HAVE USED THE OFFICE OF A DEACON WELL, PURCHASE TO THEMSELVES A GOOD DEGREE, AND GREAT BOLDNESS IN THE FAITH WHICH IS IN CHRIST JESUS.

AS there is a divine order in the invisible church, and the whole management of that large spiritual family is conducted by rules of divine wisdom, so the Lord hath appointed a beautiful order in his visible church; and in his book he hath given us the pattern of his house, and the manner of the officers and ordinances thereof; at least the biggest lines of it are drawn fair and plain, though some of the lesser circumstances may be more obscurely expressed. By a due study of the Scriptures, and the exercise of our common reason, we may find a rule to guide us, in the most considerable and necessary affairs that belong to the constitution and regulation of the house of God.

Christ himself, the Son of God dwelling in flesh, is the Head, the chief Shepherd and Overseer of all his visible church upon earth; for he wears a visible body, though for a season he be departed from our sight, and dwells in heaven; thither he ascended to "receive the promise of the Spirit, and to bestow gifts upon men;" *Acts* ii. 23, and *Eph.* iv. 8, 11. By these gifts he furnished persons, and fitted them to sustain offices of an ordinary, or an extraordinary character.

The extraordinary officers were apostles and prophets, and some suppose evangelists also, these were to continue only for a season; the ordinary are pastors and teachers, elders and deacons, which are to continue through all ages of the church.

To omit all the disputes that have been raised how far pastors, teachers, elders, and bishops, or overseers, differ from one another, I shall, at present, consider all the ordinary church officers as included under these two names, *bishops and deacons.* For thus the apostle seems to include them; *Phil.* i. 1. The visible church of Christ, on earth, is composed of spirits dwelling in flesh, and as the bishops, or overseers, chiefly exercise their care toward the soul or spiritual part, so the chief care of the deacons seems to relate to the body, and things belonging to it: And as there are some special persons in the church, to whose outward welfare the care of the deacon must be extended, so the whole church, considered as a society meeting together for worship, will need some conveniencies for the outward performance of that worship, which seems to be another

part of the deacon's business. But I proceed to pursue my discourse according to the text, whereby this will appear with more evidence.

There are these three things contained in the words:

I. The office itself.

II. The due discharge, or performance of it, and

III. The encouragement, or reward.

I. First, the office itself. Under which we shall consider four things, *viz.* The business of it; the reason of its institution; the duration of it; and the ordinary method of investing a person with it.

First, The business of a deacon is expressed very briefly in Acts vi. 2, *to serve tables,* or to manage affairs that relate to the provision for the table of the poor, to which are added, in the general construction of the words, the table of the ministers, and the table of the church at the Lord's-Supper.

The poor oftentimes make a considerable part in christian churches. In the beginning *the poor received the gospel.* And thus it is still: *Not many rich, not many noble are called, but God hath chosen the poor of this world, rich in faith, and heirs of the kingdom;* 1 Cor. i. 26, 28, and James ii. 5. Now, as it is the duty of the rest of the church, and especially of the rich, to communicate toward the supply of the wants of their poor brethren, so it is the proper business of the deacons to receive and to distribute these supplies; and no doubt but it is their duty to excite and exhort those whom they see negligent, and to urge them to the performance of these works of love and piety.

The table, or outward support of the ministers, ought to be provided by the church also. 1 *Cor.* ix. from the fourth to the fourteenth verse, *The Lord hath ordained, that they which preach the gospel, should live of the gospel.* And it seems very convenient, that one or more persons should be deputed to see this performed, that so the ministers may not be too much exposed to a solicitude about outward things, nor their cares too much laid out upon the necessaries of the life of their bodies, while they should rather be devoted, or entirely *given up to the word of God in prayer,* for the service of souls.

Besides, if the ministers of the church were forced to expect and receive the several portions of their maintenance from the several persons of the church, their own collection of it would take up too much of their time, would expose them to the censure of covetousness and greediness, would too much impose upon their modesty, or would make their maintenance fall short.

And I might add also their subsistence, which is but an act of justice due from the church, would look too much like mere charity, and appear too precarious and dependent; and their obligations to particular private persons would too much expose them to the temptation of partiality, in the exercises of their ministrations, and their pastoral care. Whereas this is forbidden to ministers; 1 Tim. v. 21, *Do nothing by partiality.* We might be more afraid to reprove some that were rich and kind, and more negligent in comforting and instructing others that were poor, and could give but little. But when the minister receives his support from the church in general, by the hand of the deacons, as officers of the church, then he is much more secured from these temptations. And no doubt it is the duty of the deacons to see to it, that each member

of the church perform their part toward the support of the ministry; for it hardly seems decent for the minister himself to urge this duty on the people.*

The table of the church at the Lord's-Supper, is maintained by the contributions of the church. The bread and wine must be bought at the public expense, but particularly provided for by the deacons, who in short are stewards of all the temporal affairs that relate to the church, even as the bishops and elders are of the spiritual; and both under our Lord Jesus Christ, who is the great Pastor of pastors and churches, and the Feeder of his own poor, and provides all things for all.

I might add to these, that the business of a deacon seems also to extend to some care of the place of public worship, and all the necessaries that belong to the outward service of the Lord, such as tables, seats, vessels for bread and wine, and for water in baptism, &c. For though these things are not particularly expressed among the businesses of a deacon, yet they will never be performed, unless some one or more persons be deputed for this service; and who can be more proper persons than those, who by divine institution are entrusted with the contributions of the church? Yet in most of these affairs it is necessary to advise with the pastor, and with the whole church, and in every important matter to take their direction; for the deacons are but stewards, and not proprietors or possessors of the church's treasure, nor are they lords of the temporal things relating to the church.

Second, The reason of their institution, which is to assist the ministers or elders of the church in the care of all those things, which if devolved entirely upon the elders, would hinder them from their proper business, viz. *the word and prayer*. The apostles, who were the elders and rulers of the church at Jerusalem at that season, managed the affairs of collection and distribution at first. *Acts* iv. 35, "The disciples brought the money and laid it down at the apostles' feet, and there was a distribution to every one according to their need;" but, *Acts* vi. 1, 2, "when the disciples were multiplied," the elders could not take care of all the poor; therefore the order of deacons was instituted in the next verse; and we find, in *Acts* xi. 30, that the elders, or ministers, were not utterly divested of all power or care of the contributions, for Paul and Barnabas themselves received the contributions of the church at Antioch, to be disposed of to the poor saints in Judea; and *Acts* xii. 25, Barnabas and Saul are said to return from Jerusalem, having fulfilled this service, τὴν διακονίαν, this work of a deacon, as it is in the original. So that as the ruling elders probably are helps in government, as the teachers are helps in doctrine and catechising, so the deacons are helps to the pastor in the management of all the outward and temporal affairs that relate to the church's welfare. Now if these things are so, the following consequences will arise:

1. That in churches which are very small, there is no absolute necessity of such officers, as ruling elders or deacons: For the pastor may perform all the services necessary in that church, with some very little assistance from the brethren, at such special occasions, wherein his own modesty may excuse him, or his other labours prevent him. It is plain the deacons were not chosen till disciples were multiplied.

2. As pastors and ruling elders are not utterly divested of the care of the poor by the institution of deacons, so the deacons ought not to determine any thing of considerable

* There is a very good discourse on this subject, viz. *The Maintenance of a Christian Ministry*, published by Mr. David Rees.

importance, without consulting the elders, as I have hinted before; nor in affairs of this kind of the biggest moment, ought any thing to be determined by elders and deacons, without the cognizance and approbation of the church, for in these temporal things we are all but stewards of what the church entrusts us with.

3. Hence perhaps we may borrow another argument for the extent of the deacon's care, that is, that it reaches to all those things of a temporal nature, wherein the brethren of the church may help the elders; for this is the very design of the deacon's office, lest the elders, or ministers of the church, might be too much interrupted in their continual attendance on the word and prayer; and especially where there are no ruling elders chosen to assist the pastor or teacher, in managing church affairs, the care of the deacons seems still to be more extensive for the help of the pastor. And perhaps the word *helps*, 1 Cor. xii. 28, may have some reference to these offices of ruling elders and deacons.

Third. The duration of this office. Doubtless it was designed to continue throughout all ages of the church, which appears from these two reasons:

Reason I. The objects of their care always continue: *The poor ye have always with you;* John xii. 8. And *ye shall always have them*, to exercise your charity and compassion; *Deut.* xv. 11. And in large churches the temporal affairs thereof will be too heavy a burden for the ministers to sustain, and therefore they will need the assistance of deacons. Besides, the provision for their own support, and for the table of the Lord, will be always necessary, while we minister before the Lord in garments of flesh, and while the table of the Lord must be furnished with bread and wine, and other necessaries, in order to participate thereof.

Reason II. They are mentioned by the apostle Paul, as stated officers of the churches, and directions given concerning their character, their behaviour and management, as there is concerning other standing officers and affairs of a church.

It may be added also, that if they were thought necessary to the primitive churches, in the age of miracles, and the age of love, when God took special care of his ministers, and excited all the members of a church to a mutual care of one another, and of the poor, much more necessary are these officers in all the following ages, when ministers must acquire and improve their gifts by hard study, and cannot maintain themselves *by the work of their hands*, and when the *charity* and mutual care of church members *waxes cold*, and need some persons to be appointed for this very business.

Fourth. The way of their constitution, or how persons are to be invested with this office; which seems to be performed by these five things:

1. By inquiring amongst the members of the church, who come nearest to the characters that are given of a deacon; Acts vi. 3, *Men of honest report, full of the Spirit, and of wisdom;* 1 Tim. iii. 8, *Grave, not double-tongued, not given to wine, not greedy of filthy lucre, holding the mystery of the faith in a pure conscience.* Unto these I might add, that prudence will direct us to choose such persons who are not very poor, lest the stewardship of the church's money should be a temptation to them. Not mean or despised in the church, lest they want due courage and sufficient influence upon their brethren for the management of their office. And they should be persons capable of admonishing the rich, and of comforting the poor, even as their business is to converse with both, to receive from the one, and distribute to the other. They should also be persons whose temper is compassionate, and who have as it were a natural care for the good of the church, and such as have some leisure hours, and who are not so over-

whelmed with the cares and constant business of this life, but they may now and then devote their thoughts, and their hours, to the service of the church of Christ.

2. They must be proved before they are fixed in this office; 1 *Tim.* iii. 10. I do not conceive this to intend their management of the deacon's office, by way of experiment for a year or two; but rather a farther character of the persons chosen. Let them be such as are of some considerable standing in Christianity, whose character and conversation have been proved and found blameless, and fit for such an office. It seems to signify the same with that character of a bishop, verse 6, " that he must not be a novice," that is, not one that is lately converted, or lately received into the christian church.

3. They must be chosen by the church; Acts vi. 3, *Brethren, look ye out among you seven men, &c.* The pastors, or elders, must not choose them without the church, for the apostles themselves, who were inspired, would not determine the persons, but left the church to choose them, to shew us the stated method of choosing ordinary officers in a church.

4. They must accept of the call of the church, and that freely, and they must solemnly devote themselves to the service of Christ and the church. For all the subjects and servants of Christ in his visible kingdom must be voluntary, and the office of a deacon must be undertaken *willingly*, and *not by constraint*, even as the office of a bishop; 1 *Pet.* v. 2.

5. They must be devoted and separated to this work by the solemn prayers of the church, and seeking the divine benediction upon them in the discharge of their office. So were Paul and Barnabas separated to the work of the ministry among the gentiles, *Acts* xiii. 2, 3; and so the deacons to their office, *Acts* vi. 6.

Here note, That the elder or elders of the church, ministers and teachers, are to be chief agents in this affair. So you find the apostles and teachers were the chief agents in the two texts just cited: And as ministers may pronounce a benediction, or blessing in the name of our Lord Jesus Christ, so perhaps here it may be proper for the minister to pronounce them blessed, if they faithfully perform this office, as well as to pray for a divine blessing upon them.

The great dispute and inquiry, whether imposition of the hands of elders in this benediction, is now necessary, as in the primitive times, may be thus resolved: In many scriptures, where imposition of hands is mentioned, there were extraordinary and miraculous gifts conferred: You find this in Stephen and Philip, two of the first deacons, and you frequently find the Holy Ghost conferred on men by this ceremony; *Acts* viii. 17, 18, and *chap.* ix. 17—19. Nor can I find one plain and certain instance of hands imposed in the primitive churches, where we are sure it was but an ordinary separation to an office, without any extraordinary gifts conferred, or an inspired and effectual benediction given by an inspired person. Therefore I cannot conceive it necessary to be now practised; for if it had been necessary, surely there would have been some more certain direction and command for it.

But since there is so much colour given to it by some examples or expressions in Scripture, where we cannot certainly prove that extraordinary gifts were conferred, we leave every church, and every elder, to their own liberty of opinion and practice; and those that will impose hands in such a way of benediction, upon any chosen officers in a church, shall never be censured by me, nor dare I pronounce it idle or unlawful. Yet

still I think, if there be any elder or elders in that particular congregation to which they belong, these are the most proper persons to perform such a ceremony.

I would add here, that as there were many sorts of consecration of old in jewish times, by washings, sprinklings, water, fire, &c. in the New Testament things are said to be *sanctified by the word and prayer;* 1 Tim. iv. 5. And therefore some useful instructions and exhortations from the word of God, seem very proper at the consecration of a bishop, or of a deacon, as well as prayer.

Let us proceed to the

II. Second thing expressed in the text; that is, to shew how the persons ordained may attain to a good performance of this office of a deacon. Then a man uses the office of a deacon well, when,

1. He does it with sincere design for the honour of God, and zeal for the good of the church. This single eye, this sincere aim, ought to attend every action of a Christian, and especially every part of the practice of a church officer, whose business has a more direct design of this end, and should have a more immediate and manifest tendency toward it. *Simplicity and godly sincerity* should run through the whole course of services in a church, without *fleshly wisdom* and carnal interests.

2. With diligence and care: When Artaxerxes the king gave command to the treasurers of his state, which are much the same as deacons in a church, to assist Ezra the priest in building the temple, he charges them, *Whatsoever is commanded by the God of heaven, let it be diligently done for the house of the God of heaven;* Ezra vii. 23. Let this be a reproof to each of us, when we are negligent about any thing in the church of God.

Deacons should not only supply those wants that are made known to them, but be careful in inquiring into the necessities of the church, whether such persons may not want relief, who are too modest to burden the church, or ask support of the public. Whether Onesiphorus was a deacon or no, is not certain, but he fulfilled the office of a deacon, διακονος, both in Ephesus and at Rome, when "he sought out Paul diligently, and often refreshed him, and ministered unto him in many things;" 2 *Tim.* i. 16—18.

The number of deacons is not determined in Scripture, but so many ought to be chosen, whose due diligence, according to their circumstances, may answer the necessities of the church, without being overburdened themselves.

3. The office of a deacon must be performed with prudence and discretion: Distinguishing who are poor indeed from those who are covetous and pretendedly poor; "that the church be not charged more than is necessary;" 1 *Tim.* v. 16.

4. With faithfulness to the church and to the poor, and to the ministry: For in all cases "it is required of stewards that they be faithful;" 1 *Cor.* iv. 2. Distributing the contributions for the several services of the church, according to the design for which it is given by the church, is their duty.

5. Without partiality. Not neglecting any part of their office, or the service of any of the tables to which they are called, but laying by all carnal respect; 1 *Tim.* v. 21. Distributing to the poor, according to the degree of their poverties and necessities, whether these be constant or occasional: And this must be done with an impartial view, *without preferring one before another*, upon any selfish or carnal considerations.

6. With cheerfulness, and not grudgingly; *Rom.* xii. 8, "He that sheweth mercy, let

him do it with cheerfulness, he that ruleth with diligence;" which words seem to be spoken concerning the deacons and elders of a church. They ought not to be lavish of the church's money, nor ought they to be fond of saving, and too thrifty, lest the poor be grieved, and the church dishonoured by the hardships which any of their members suffer.

7. With gentleness and compassion. Treating the poor kindly, in imitation of our Lord Jesus Christ, who condescended to the meanest, and pitied the poor: His servants they are, his deacons, and he expects they should take tender care of his members, not using them roughly, nor speaking hard things to them, lest their spirits be broken.

8. I cannot but think that occasional instructions, admonitions, consolations, and prayers, with, and for the poor, ought to accompany the performance of a deacon's office; for these things are, in some measure, the duty of every Christian, as is frequently intimated by St. Paul; and much more surely of those who bear an office in the church, and who are called to a more particular acquaintance with the state of it, and converse with the members of it; and especially when it is a piece of their character, that "they must hold the mystery of the faith in a pure conscience;" that is, they must be men of a good acquaintance with the great truths of the gospel, and of an unblemished character for sincerity and piety.

It is certain that as they are entrusted with the temporalities of the church, and know when there are any deficiencies with regard to the table of the minister, or the poor, it is their duty to admonish the members, and especially the rich among them, to do their part toward the supply of their wants.

It may be observed that the first deacons had extraordinary gifts of the Spirit, and were eminently furnished for such work as exhortation and prayer. Philip and Stephen, who were two of the first seven deacons of the church at Jerusalem, were preachers of the gospel. Compare *Acts* vi. 5, with *verses* 9, 10, and *Acts* viii. 5. And in the account which St. Paul gives us of deacons in my text, all of them have such an honourable encouragement of arriving at higher degrees in the church, as gives us reason to suppose they were sometimes employed in some ministerial services relating to the spiritual state of the poor, as well as their temporal necessities.

And yet it must be still granted, that the original design of the institution of deacons, was to assist the pastors in the ministration to the necessities of the poor, and distribution of the monies which were collected for this purpose, and not to preach the gospel publicly, though the first deacons, having extraordinary gifts, were often so employed.

III. The third thing in the text is the encouragement given to the due performance of a deacon's office. It is said by the apostle, *they purchase to themselves a good degree, and great boldness in the faith which is in Christ Jesus.*

The late reverend and learned Doctor Owen believes this καλὸν βαθμὸν, or "good degree and confidence in the faith," to signify no more but a place or seat of some eminency in the church assemblies, which is due unto such deacons, where with boldness and confidence they may assist in the management of those affairs of the church which belong unto the profession of *the faith which is in Christ Jesus.* But he adds, "If any shall rather think, that both of these expressions do signify an increase in gifts and grace, which is a certain consequence of men's faithful discharge of their office in the church, wherein many deacons of old were eminent unto martyrdom, I shall not

contend against it." Others think, that καλῷ βαθμῷ, or *good degree*, signifies the office of the presbytery, which they obtain by a due performance of the office of a deacon.

If I might give my conjecture, I would explain it these two ways:

1. They obtain a good degree of honour and respect from the elders, for the assistance which they give them in church affairs; from the poor, for their compassion and tenderness toward them, and supply of their wants; and from the whole church for their fidelity, wisdom, and diligence, in the management of all the temporal affairs that relate to the church, for the honour of the gospel, and conveniency of the members.

2. By conversing much with the elders of the church, by acting in concert with them, by visiting the poor, and performing private christian services towards them, such as exhortation, consolation, and prayer, and by a constant acquaintance and observation of church affairs, they acquire greater knowledge, they improve their gifts, and their graces, they grow bold to speak of the faith of Christ more publicly, and have taken a good degree, or a good step, towards the office of a ruling or a teaching elder in the church.

And this is a very proper expression concerning those times, when christian churches were the only schools for the education of ministers; and the exercise of gifts, in and for the service of the church, was one chief means of their preparation for it. I confess, in our day, since we have many outward advantages for the education of ministers in learning, and their improvement in knowledge, and in all gifts, it is not so usual, nor so necessary, that a deacon should grow up into an elder, or bishop. Yet in some churches, such persons have been found in late years, who have been deservedly called to the office of the ministry, by the great improvement of their gifts in the church, their uncommon degree of knowledge and grace, and the peculiar blessing of God.

After all, this is certain, that those that grow old in such an office, well performed, grow honourable in the sight of God and man; for *God is not unrighteous*, my friends, *to forget your work and labour of love, which ye have shewed toward his name; in that ye have ministered to the saints, and do minister; and we desire that every one of you would shew the same diligence unto the end;* Heb. vi. 10—12.

INFERENCES.

I. We may see something of the beauty of gospel-order in the several offices of the church of Christ, but I shall now remark it only in these two respects: 1. That as the visible church here on earth, and the members of it, have many bodily necessities and conveniencies to be supplied, as well as their souls to be instructed and edified; so there are distinct persons of divine appointment commissioned to manage these affairs, and fulfil these services, *viz.* pastors and deacons. 2. Another part of the beauty of that order consists herein, that the one is to act in subordination to the other; the deacons are chosen for the assistance of the elders, and thus acting together by a sweet concurrence, the church is preserved in peace, the necessities of it are supplied, and the gospel honoured.

II. See here the tenderness of Christ, the great Head of the church, towards his ministers and his poor: He has instituted officers to take care of their outward subsistence, as well as required the church to contribute for that end. Hereby the

poor will not be left to perish, nor ought they to be exposed to extreme hardships, if the church can prevent it: Hereby ministers are secured from a too great solicitude about their own maintenance, and from interruptions in their more proper work, as well as from the malicious censures of the world, which would fall upon them, if they were overburdened with secular cares and concerns, either for the church, for the poor, or for themselves.

III. Learn from my text, that the services which are done for Christ and his church, have their rewards annexed to them for their encouragement in this world, besides the infinite recompence of reward in the world to come. Faithful deacons in a church, obtain *a good degree* of honour and esteem.

IV. From the deacons of a particular visible church, we may raise our thoughts unto our Lord Jesus Christ, who is the great minister and *bishop of souls;* and I may call him too, the great and universal deacon of God the Father in the church invisible. The Father *has given into his hand* the riches of his grace, *the treasures of his love,* divine *food,* and spiritual *clothing, mansions* of glory, and *inheritances in light;* to be distributed amongst his poor saints, that they may be *nourished* and brought through this *wilderness,* and that they may be enriched with grace, be brought home to heaven, and be for ever blessed. He is diligent and faithful, he is wise, and gentle, and compassionate, and answers all the characters of a deacon in the highest degree. He spreads a table for starving sinners, and furnishes it with *his own flesh and blood;* he feeds us with *the bread of life,* and with *living water,* that we may eat and drink, *and live for ever.*

And in this sense, when the deacons are serving tables, and supplying the wants of the poor and the church visible, out of what is trusted with them; let them remember and rejoice, that they represent the character of our Lord Jesus, as he is entrusted with all supplies from the hands of the Father, and distributing unto the church invisible. To him let the eyes of your faith be lifted for wisdom, for gifts, and grace, to manage the affairs with which you are entrusted, and he shall fulfil the promises of a large reward. *Amen.*

DISCOURSE III.

INVITATIONS TO CHURCH FELLOWSHIP.

PSALM lxv. 4.

BLESSED IS THE MAN WHOM THOU CHOOSEST AND CAUSEST TO APPROACH UNTO THEE, THAT HE MAY DWELL IN THY COURTS: WE SHALL BE SATISFIED WITH THE GOODNESS OF THY HOUSE, EVEN OF THY HOLY TEMPLE.

THE latter words of the verse shall be the subject of our present meditations, wherein we shall consider what is meant by "dwelling in the courts of God," and what is "the goodness of his house" wherewith his favourites *shall be satisfied?* There are three senses of this sacred phrase, "dwelling in the courts of God;" and the persons who are favoured to inhabit the sanctuary in either of these senses, may have the blessing of the psalmist pronounced upon them.

The first, and the most obvious meaning of the words "dwelling in the courts of God," is, a continual attendance on him in the ministrations of his temple, and the discharge of some holy office there. This was the felicity of several of the priests and the levites of old, under the jewish dispensation: And this is the happiness of the ministers of the gospel now, who are continually employed in the things of God and the affairs of religion; *who give themselves up*, as the apostles did, *to the ministry of the word and prayer*; Acts vi. 4; whose business it is to attend *to reading*, *to exhortation*, and *to doctrine*, to *mediate* on God, and Christ, and salvation, to converse with the glorious invisibles of the upper world, and *give* themselves *wholly to them*, as the apostle charges Timothy the young evangelist; 1 *Tim.* iv. 13, 15. *Blessed is the man* whom God chooses for a Christian and a minister, whose general calling, in common with the rest of Christians, is to save his own soul, and whose particular employment as a minister is to save the souls of others. This order of men are utterly unworthy of their privilege, if they do not prize it highly, set a just value upon it, and confess their own happiness.

But I have shewn elsewhere, that this sense of the words, which is limited to priests and levites, could never include the whole meaning of David; for then he had excluded himself from this blessedness, who was not of the tribe of Levi, nor capable of priesthood; and yet he declares, with holy joy, that he would *dwell in the house of the Lord for ever;* Psalm xxiii. 6.

The second sense of the words, therefore, and which seem to be the very design of the Psalmist, is this: *Blessed are they* "whose habitation is near to the ark of God and the tabernacle," and thereby they are made capable of frequenting the house of God, and of waiting upon him, with great constancy in the holy ordinances of his worship."

These are the persons whom my text pronounces happy: There was but one tabernacle, and one ark, in the days of David, and but one temple in succeeding ages appointed for all the inhabitants of the land of Canaan; but one place where God had recorded his name, and appointed the public sacrifices, and peculiar solemnities of worship, on which all the men of Israel, who lived at the farthest distance, were obliged to attend three times a year: But those whose habitation was near the place where the ark resided, and these solemnities were performed, had more frequent opportunities of such attendance.

The doctrine, which we may derive from this sense of the words, may be thus expressed. " Happy are those persons whose circumstances and stations of life are appointed by providence in so favourable a manner, as to give them liberty to come up constantly to the house of God, and wait upon him in all his institutions:" And the instances of their happiness are evident enough. For,

Instance I. " These are nearer to the visits of God, and may see him oftener, than others." These may have such a frequent sight of his *power and glory*, as they are to be seen *in the sanctuary*, Psalm lxiii. 2. It is a pleasure to be near our best friend, to be near our dearest Father, to be near our own God. When we have a relation dwells near us, how often we are present with him! And they that dwell near the court, have opportunity of seeing the king upon every occasion.

Instance II. " These have more external helps towards heaven, than others have." It is true, we have a glorious mercy in this respect, that the Scriptures are every where in our hands, and many labours of holy men in writing, who being dead, yet speak; but the ministry of the word in the house of God, is the great ordinance for conversion and edification. It is the chief standing institution of Christ for this purpose, even to the end of the world.

Instance III. " These persons have supplies of their wants nearer at hand; and whatsoever their burdens be, they are nearef to relief;" whether their complaints are of a spiritual or temporal kind. How often has the soul that was in the dark and perplexed, received hints of direction in the ministry of the word! How often has the tempted Christian been strengthened and supported there! And the mourning saint has been often comforted. And even when we labour under temporal necessities and sorrows, though the sanctuary is not furnished to supply every thing of this kind, yet the words of grace and consolation that have been heard in the church, have often borne up the spirit of the poor and the afflicted; they have been led to the mercy-seat, the spring of all supplies, and they have gone away patient under their burdens, and *rejoicing in hope* of deliverance here, or full salvation hereafter. We in this world are travelling through a wilderness, *a dry land:* Now to be near a sweet fountain, or rather to have a sweet stream flowing by us all the way, is a choice comfort; while those that are afar off die for thirst, or go many a long hour without supply; see Psalm lxiii. 1, 2, where David being afar off from the house of God, cries out aloud after him: *O God, thou art my God, early will I seek thee; my soul thirsteth for thee, my flesh longeth for thee in a dry and thirsty land, where no water is; to see thy power, and thy glory, &c.*

Happy those who dwell near the celebration of divine ordinances, for these are the persons who stand fair to obtain all advantages of the house of God, and to *be satisfied with the goodness of* his *holy temple.*

Before I dismiss this second sense of the words, I shall make these two or three reflections:

Reflection I. "How much do those fellow-creatures want our pity, and our prayers, whose station places them afar off from the courts of God," and who are deprived of all the blessed advantages that are to be enjoyed in the church! Let us, whom divine providence has favoured with a nearer approach to God, fill his courts with the voice of joy and praise for our peculiar mercies; and let our hearts at the same time feel a becoming compassion towards those who are afar off. O pity those who dwell in the lands of darkness and heathenism, and have nothing near them that looks like religion, but the courts of idolatry, and their abominable rites and ceremonies; filthy ceremonies, and fantastic or cruel rites with which they worship *images of wood or stone*, and their brazen or their golden gods. Pity the wretches who dwell under antichristian tyranny, where every thing sacred is over-run with superstition, and the pure ordinances of the gospel are daubed over so thick with various painting, and so buried under a load of human inventions, as to diminish, if not utterly destroy, all their use and power. Pity the protestants, whose places of worship are demolished, and the sanctuaries are thrown down all over their land. Pity the holy confessors that are banished from the courts of God, and his beloved worship; and those who are shut up in prisons, enclosed in dungeons, under heavy bonds of iron; and those also who groan in secret in their own houses, under the terror of watchful and malicious persecutors. Let us put our souls in their souls' stead, and say then, "Would we not think ourselves fit objects for pity? And should we not desire the prayers of the saints of God?" Think then, Christians, let you and I think with ourselves, who made the dreadful and the happy difference? Happy for us indeed, but dreadful for our brethren, who endure these banishments, or heavy bonds!

Reflection II. Here let us reflect again, "how much more excellent is the gospel state, than that of the levitical law! And how much more happy are Christians in England, than the Jews in Canaan!" Here we have houses of God near us, churches assembling in every town. They were forced to travel three times a year to Jerusalem, many long and weary miles: It is true God refreshed them in their journies; *Psalm* lxxxiv. 5—7; he gave them showers of rain when they were faint or thirsty; but they travelled through Baca, that is, the valley of weeping; many wants and inconveniencies attended them, and the difficulties and burdens of such a dispensation were not light nor little.

We may yet continue this reflection, concerning those who dwell in this great city, and say, "How great is the privilege the Christians in London enjoy, above those who dwell in distant villages, or in little solitary cottages in the country!" Here we have the gospel preached in every street, and places of worship at our right-hand and our left. We dwell as it were in the courts of God; but the poor villager must travel many a mile, and perhaps through miry ways, to attend on the nearest ministrations of the word; and in the mean time the young and the feeble of the family must be confined at home. O what advances in knowledge and grace, what growth in holiness, and what approaches to heaven are to be expected from those who dwell so near the places of divine worship, and where the provisions of heaven are brought to our very doors!

"O how desirable a thing it is to enjoy all such circumstances of life, as give us liberty to frequent the courts of God!" How much should we value, and how wisely should we improve such a blessing! Have a care of neglecting due seasons of worship, and be not negligent or unfrequent in your visits to the courts of God, lest he lay some heavy

restraints upon you, and divide you from his sanctuary. He has bands and chains of various kinds to cast upon such slothful professors; persecution or sickness, loss of your limbs, or loss of your senses, whereby you may be cut off from the blessings of his church; or he may break up house and remove far from you, because you do not visit him; or he may place your tabernacle afar off from his own, and cut short your liberty; for it is he which "determines the bounds of your habitations;" *Acts* xvii. 26.

O how unhappily are some persons overloaded with the cares of this life! How are they hurried and overwhelmed in a tumult of worldly affairs! And the business of their daily calling is too often ready to entrench upon divine hours and ordinances. How sore a distress is it to a pious Christian to be confined and withheld from the courts of God, by long and tedious distempers of body! How painful is it to his spirit to lie languishing and faint on a bed of sickness, while others are made to drink of the river of pleasure, and refreshing streams of the sanctuary! They are sorrowful, while others are made joyful in the house of prayer. They are tasting the wormwood and the gall, while we feed on the pleasant things of the *house of God*, and are *satisfied with the goodness* of his *holy temple*.

And thus I dismiss the second sense of the words, which probably was the precise meaning and chief design of the psalmist himself, considering the dispensation under which he lived.

But when, in the times of the New Testament, we apply the language of the jewish prophets to the state and institutions of the gospel, we have encouragement enough from the example of Christ and his apostles, to extend and further enlarge the meaning of those ancient phrases beyond the literal and jewish sense, and thus accommodate them to christian affairs.

The third sense of the text, therefore, when enlarged and explained to evangelical purposes, may be this:

Approaching to God, in the style of the gospel, signifies, either our "being brought nigh to God, and reconciled to him by the blood of Christ," and the grace of the Holy Spirit, as in Eph. ii. 13, 18, *In Christ Jesus ye who sometimes were afar off, are made nigh—and have access by one Spirit to the Father*. Or else it means our "drawing nigh to God in Spirit and in truth," in prayer or holy meditation, &c. So Heb. x. 21, 22, *Having such a high-priest over the house of God, let us draw near with a true heart.*

"Dwelling in the courts of God," may signify an union to the church of God, which is his spiritual house, upon a solemn profession of his gospel, and a visible allowed right to all the privileges and ordinances thereof. "The church is the house of the living God;" 1 *Tim.* iii. 15. He dwells no longer *in temples made with hands*, nor confines his special presence to any single spot of ground, or any material building: The assemblies of his saints are his courts, his dwelling places: "Where two or three are gathered together in his name, there is Christ in the midst of them;" *Matt.* xviii. 20. Every particular church of Christ, as well as the church catholic, or universal, is "a holy temple of the Lord, built up for a habitation of God through the Spirit;" *Ephes.* ii. 20, 21.

Now surely, if the men of Israel had a blessing pronounced upon them in my text, whose habitation was near to that material sanctuary, we may with equal assurance, and with much greater delight, say, "Blessed is the man, O Lord, whom thou choosest and causest to draw near unto thee, that he may dwell in thy house;" in the sense of the

New Testament, that he may be "added to thy church;" *Acts* ii. 47; that "he may be joined to the disciples;" *Acts* ix. 26; that he may "be received in the Lord;" *Phil.* ii. 29; that he may be united to the christian assemblies, and become a member of the church of Christ.

Let us again consider the hebrew expression, חצריך ישכן, *that he may dwell in thy courts*, which may with more exactness and propriety be rendered, "he shall or will dwell," &c. and then the verse will sound thus, *Blessed is the man whom thou choosest, and causest to approach unto thee*, he shall *dwell in thy courts*, as a promised privilege; or he will do it as a voluntary and delightful practice; in which latter sense, the words will afford this doctrine.

Doctrine. "He that is caused in a spiritual manner to approach or draw near to God, will have a desire to dwell in the house of God; that is, to be united to his church."

He who has tasted *that the Lord is gracious*, and is brought near to God by the atoning blood of Christ, and the sanctifying influences of the Holy Spirit, will desire to be a visible fellow-citizen with the saints, and to become one of the household. He who has frequented the courts of God, attending on the worship of the church, and has felt the special presence of God there, convincing, converting, and comforting his soul, will be glad to dwell there, and to join himself to the church, as a part or member of it, and that for these reasons following:

Reason I. "Because he finds so much delight in approaching near to God, that he desires still to be nearer." He feels that nearness to God is happiness; and he cannot have too much of that; he cannot be too near his chief good, and his soul's delight. When he has come up to the house of God, and only paid a visit there, he has tasted so much sweetness in this visit, that he cannot satisfy himself to be a mere visitant, where he may be an inhabitant; he would dwell where God dwells, and be always with him.

God himself, in infinite condescension, makes a visit to families, and to closets, where prayer is performed, and comforts praying souls. But "God dwells in Zion, this is his rest for ever, for he has desired it;" *Psal.* cxxxii. 13, 14. Therefore holy souls would dwell there also. David would have the ark brought to Zion, that he might dwell with God: And he often longed to "dwell in God's house;" *Psalm* xxvii. 4. Peter was near God on the holy mount, and he was immediately for "making tabernacles," and dwelling there; *Luke* ix. 33.

He that has drawn near to God in worship, enjoys so much pleasure in common ordinances, that he breathes after special ones: With God's invitations, he is pleased, and persuaded to come, and he would fain taste the entertainment. When Christ by his messengers speaks in general to mankind, he finds a sweetness in the voice, he longs therefore to have Christ speak particularly to him as a believer and a friend. When Christ publishes love to the world, it is pleasant to hear it: But he longs to hear him say to his own soul, *My beloved.* He has heard wisdom inviting the sons of men to her feast; Prov. ix. 5, *Come eat of my bread, and drink of the wine which I have mingled.* He has tasted of these provisions in the spiritual sense of them, and he would partake thereof in all the sensible emblems too.

He is well pleased with the covenant of grace, and he agrees to it heartily; he would therefore set his own seal to it, and receive a seal from God. He that has a true relish of divine privileges, will long after their increase and enlargement; he that has felt any thing of heaven, will get as near it as possible here on earth.

Now are these the breathings of our souls? Have we ever found such divine delight in approaching to God, as makes us long after greater degrees of nearness to him? We have reason to doubt whether our hearts ever drew near to God in the common institutions of his worship, such as prayer, reading, and hearing the word, if we have no appetite to the special entertainments of his house, and the provisions of his holy table. We may justly question, whether our souls are brought near to God at all, if we have no desire to dwell with him.

Reason II. "He that feels grace begun in his heart by approaching to God, will be ever pursuing those methods whereby it may be carried on." The very word οἰκοδομὴ, or *edification*, which is used in several places of the New Testament, to signify "the growth of grace," does properly mean "building up," and seems to have special reference to the house of God, that spiritual building to which every true Christian should belong, and that in a visible manner too. He that was convinced of sin and of righteousness, and was led into the glorious light of the gospel, by drawing near to God in public worship, when he was before blind and ignorant, will surely seek a greater nearness to God, that he may insure divine illuminations, and dwell always in the light. He that was sanctified and made a new creature, by approaching to God in the common ministrations of his temple, will lay himself under all the special advantages that the temple is furnished with, to maintain his new nature, and increase in holiness. The communion of the saints, and the fellowship of a church, is an appointed means for the increase of grace, and fruitfulness *in every good work.* Psalm xcii. 13, 14, *Those that be planted in the house of the Lord, shall flourish in the courts of our God; they shall bring forth fruit in old age, they shall be fat and flourishing.* And I think I may pronounce this truth boldly, "That soul has nothing of true religion or piety begun, who is perfectly contented with any little and low degrees of it, and does not desire its increase."

The Christian who has found God in his sanctuary, according to his word, longs to be satisfied with more of his special goodness. You may read his encouragements in the words of the prophet; *Isaiah* lv. 3, 11, compared with *chap.* lvi. 4—7. When the Lord said to him in the public ministry, *Incline your ear, and come unto me; hear, and your soul shall live; and I will make an everlasting covenant with you;* he heard the invitation of mercy, and he entered into the covenant of the Lord, and he begun to taste his grace: He came, he heard, and his soul lives. He has found the word of God accomplishing his good pleasure, and prospered thus far in the thing for which it was sent: Therefore he joins himself to the Lord, and takes up his place in his house, and takes hold on his covenant in a public profession; he hopes, now he is brought to God's holy mountain, that he shall be made joyful in his house of prayer.

He that has found the accomplishment of some promises, would put his soul directly under the influence of all of them. He has faith, and believes that *God is faithful* and will fulfil all his relations; he has trusted in several of the relations which God has assumed, and found them already fulfilled, as a faithful Creator, Preserver, Redeemer, &c. now he would put himself under his care, as a Father of the family, and a Master of the house, as the King of his church; and when he enters into Zion, or joins himself to a christian church, he humbly expects to find those promises made good; Psalm cxxxii. 15, 16, *I will abundantly bless her provision; I will satisfy her poor with bread. I will also clothe her priests with salvation, and her saints shall shout aloud for joy.* And Psalm xcii. 13, *Those who are planted in the courts of God shall flourish and be fruitful there.*

Now it is proper to put this question to our own souls: Do those of us who are joined in holy fellowship take pleasure in our station in the church, as it is an appointed means to increase grace in us, and to promote universal holiness both of heart and life? Do we *wait upon God* in the solemn ordinances of his church, with a humble faith in his promises, that he will meet and bless us there?

And as for those of us who have not yet taken up our places in the house of God, do we desire that holiness should increase in us? And why then do we not breathe after the blessings of Zion, and an accomplishment of those promises which God has made to his church? What sign or evidence can we have that we ever begun to receive grace from God, if we have no longing desires of soul to enjoy greater degrees of it? And how can we pretend to long after growth in grace, if we refuse the appointed means of it?

Reason III. "He that is caused to draw near to God in public worship, finds his soul softened by the approaches of divine grace, and feels the awful impression of divine commands to perform social worship." He reads his duty plain by the light of nature, that there ought to be religious societies, and public honour paid to God: He reads it yet plainer in the word of Scripture, that the original Christians were wont to form themselves into churches, or sacred societies, to celebrate the institutions of their Lord, and are required by the apostle not to forsake these assemblies: His conscience feels the divine authority, and he cannot resist plain duty.

It would be too large here to lay down half the reasons of church fellowship, as a duty incumbent on those that have tasted of the grace of God; it may be proved in a typical way at least, from the practice of the Jews, and the church under the Old Testament, in their public and solemn covenanting with God: It may be further evidenced by the many prophecies and promises concerning Zion, some of which have a reference to New Testament times, and the assemblies of the saints under the dispensation of the gospel: It may be inferred from the directions of our Lord Jesus Christ, concerning the discipline of a church, as well as from the positive institution of the Lord's-Supper, which must not be celebrated but in a christian assembly: It may be argued from the many counsels and directions which St. Paul has given concerning various offices and forms of order and government, which can have no place, but in a particular church: The great designs and ends of church fellowship, with regard to the public honour of God, the glory of Christ, and the spiritual benefit of men, are sufficient proofs of this duty: And all these arguments are established and confirmed by the practice of the apostles, and the primitive converts.

Now I say, a soul that has approached unto God in divine ordinances, will obey divine commands: He that tastes sacred pleasure, will learn sacred duty. He that has received divine mercy, will reverence divine authority. So the saints in 2 Cor. viii. 5, *They gave their own selves first to the Lord*, and then resigned themselves to the directions and commands of the apostles, according to *the will of God*.

Now let us see whether we feel the influence of this command. Do we, who are joined in holy communion, continue our stations in a church of Christ, from the authority of a divine institution, and love to the ordinance? Or is it because we cannot without difficulty or shame break the bonds of Christ, and cast his cords from us? And let us all examine by this rule, whether we truly approach unto God in ordinances, or no? Have we been melted by divine love into a compliance with all the institutions of

God? Or can we easily content ourselves to make a mere common profession, without ever subjecting ourselves to the ordinances of God's house? If you believe the special solemnities of the church to be a divine appointment, and yet have no thought or desire tending that way, you will have much ado to prove that you are sincere in any part of worship.

Reason IV. "He that truly draws near to God, finds so much satisfaction in it, that he loves to lay himself under more and stronger engagements to abide near to him." Those that delight in seeking the Lord their God, will not only *ask the way to Zion with their faces thitherward,* but they will also agree together and say, *Come, and let us join ourselves to the Lord in a perpetual covenant that shall not be forgotten;* Jer. l. 4, 5. In a solemn manner they will give themselves up to the Lord in the face of his church. They take pleasure to lay bonds on their souls to walk closely with God; and they believe, and rejoice that the great God engages himself at the same time to walk with them, according to his ancient promise, Lev. xxvi. 3, 12, *If ye walk in my statutes, and keep my commandments and do them, I will walk among you, and will be your God; and ye shall be my people.*

Besides, a person that is truly brought near to God by Jesus Christ, loves to put himself under the watch and care of Christ, and that in the most express and sensible manner, by coming into his house. He takes up his place there, that he may be guarded from those temptations, whereby the world might allure him to depart from God again. He gives himself up to the care and watchfulness of the pastor, whose business it is to watch over souls: He subjects himself to the watchful eye and care of all his brethren and fellow Christians in the church, that they may be as guards and assistants to him in his holy work. He thinks he can never lay himself under too many obligations to the Lord; and he desires that the vows of God may ever abide upon him, that his soul may be kept from all iniquity, and from wandering into forbidden ways.

Shall I intreat you now to inquire whether this be the temper of your hearts? Have you found so much pleasure in approaching God, and are you so fully persuaded that your happiness consists in it, that you are desirous to bind yourselves in the strongest manner to abide with God? Or do you think you have too many bonds upon you already? And is it for that reason you abstain from the fellowship of a church, lest ye should be tied too fast to religion, and have too many eyes and guards upon you? It is a dangerous sign that you have never been truly brought near to God, if you are willing to live at a looser rate, and are afraid of too many engagements to holiness.

Reason V. "He that draws near to God in worship, and enjoys the sweetness of the ordinances of Christ, will endeavour to maintain his public honour in the world." It is by such a public profession, Christ is honoured among men, and in his house are his ordinances celebrated. Now should Christians refuse this duty, where would be a church to bear up the holy name of Christ in this sinful world? Where would be a house of God for ordinances to be administered in? It is therefore out of love to the ordinances where his soul has approached nigh to God, and out of love to Christ, to support his glory, and confess him among men, that such a person will dwell in the courts, in the house of the Lord, and give up his name to Christ in the fellowship of his church.

And what can our consciences answer now to such an inquiry as this? What concern have we for the public honour of Christ? Can we pretend to have tasted of his grace, and have no regard for his glory? Do we plead his name before God as our only hope, and are we unwilling to *confess his name before men?* Are there none of you in this assembly, who hope you are brought near to God by the blood of Christ, and yet delay and refuse to give this public honour to him in the world? What would become of the profession of the name and glory of Christ among men, if all were of your mind, and took no more care to maintain it than you do? Where would any church of Christ be found? Where would the special ordinances of the gospel be administered? Or any such thing as the public *communion of the saints?* If all were so negligent in this matter as you are, churches would be lost, and the Lord's-Supper quite forgotten; though our Lord appointed it to continue *till he come.*

Reason VI. "He that is brought near to God, and united to Christ, will love to look like one that is near God, like a member of Christ, and one of the body." He that is of the family of the faithful, delights to appear like one of Christ's household, and therefore will dwell in his house. Gospel visible churches are types of the invisible: And a true Christian is not ashamed to own his relation to the church above, by his communion with the church on earth.

It is true, a person may be a child of God in secret, and of the household of Christ, and yet may not at present have taken up his place in the family, nor dwell in the house of God, nor be joined to any visible church; but then such persons look like strangers, like the children of this world, for they dwell with them in the visible kingdom of Satan: Now true Christians would, or should look like themselves, and not appear like *foreigners and strangers,* but as *fellow citizens with the saints;* Eph. ii. 19.

I confess there may be some seasons and circumstances, which may not only indulge, but even oblige Christians to conceal their character and profession. Piety and prudence agree well together; and we are not to expose ourselves, nor our sacred things, to a cruel and scoffing age, without an apparent call of Christ. "Pearls must not be cast before swine, lest they trample them under their feet, and turn again and tear us;" *Matt.* vii. 6. But remember, my friends, that this can never be an excuse for a constant and an universal neglect of the profession of Christ, and communion with his churches: And doubtless the guilt of such a neglect is more heinous in a day of liberty, and when there is the least temptation and danger.

Reason VII. He that approaches to God the Father, and holds communion with him, loves to be near the children, and to hold communion with the saints; for he that loves God, must love his brother also; 1 *John* iv. 21. And he must shew his love by delighting in their company, and dwelling with them, in the house of their common Father. He must and will hold a visible fellowship with them, as he hopes he has a share in their invisible blessings. All their infirmities and their follies do not disgust him half so much, as the image of God in them gives him pleasure: He loves to be with them, for God is with them; and he longs to be one of them, for they are one with Christ, united to him *in one Spirit.* There is a more intimate freedom in holy conversation among the inhabitants of one house, among the members of a christian church. They grow into an inward acquaintance: There is an opening in their bosoms and their hearts to their brethren, and a sacred friendship in spiritual affairs. See what affectionate intimacy David expresses, and what kind things he speaks concerning a fellow-member

of the jewish church, though he indeed proved a false one; Psal. lv. 13, 14, *Thou my equal, my guide, and my acquaintance; we took sweet counsel together, and walked unto the house of God in company:* And fellow Christians in the same society do, or should maintain such a pious amity.

Surely we have but poor evidences that our souls approach to God in his worship, if we have mean thoughts of his family, and despise his children, as though they were not worthy to be one with us, or we ashamed to be one with them. Will God, the glorious and the holy, dwell amongst them, and are they too despicable and unworthy to have our company? Let us ask our own hearts, if we are related to God by adoption, and become his children, why do we not join ourselves to the family, and hold communion with our brethren?

Reflection I. What further remarks shall we make now, at last, upon this doctrine, and this discourse? Surely "they teach us to make a severe reflection upon ourselves and our conduct; if we find no desire to dwell in the house of God, no breathings of soul after the fellowship of saints, and the special ordinances of the church of Christ." Either we labour under some mistake, some ignorance of duty; or we are under the power of some present temptation; or else our fancied approaches to God are but deceits and delusions. Observe my words, I cannot say this is the case of all that are not joined to the disciples, and added to the visible church; but this must be the case of all that have no desires of it. They that have no inclination to get nearer to God than they are, have a just reason to think they were never brought near him.

Reflection II. "There are surely some sensible defects or corruptions in that church, or there is a decay of religion in its members, where church-fellowship is not still esteemed a pleasure and a privilege." Where holy communion is an insipid and tasteless thing, there must be some degrees of distance and estrangement between God and his people; either God is in some measure withdrawn from that church, where saints delight not in their public assemblies and ordinances, or he is withdrawn from our souls, if we take not delight therein; for where God dwells among his saints, pleasure will dwell too. It is the presence of God makes heaven, where pleasures are grown up to their full perfection.

Let us ask our souls, whether we are not decaying Christians? Did we not use to come up to the house of God with joy, and worship together with delight? And that perhaps in times of difficulty too, as well as in days of greater liberty? What a blessed frame of spirit was David in, *Psalm* xlii. 4; and surely we have felt the same sacred pleasure too, "when we went up, as it were in multitudes to the house of God, with the voice of joy and praise." Is it thus with us at present? Or have we lost the sense and savour of those days? Where is that holy desire, that impatient longing and *thirsting* after God, which once appeared among us? Our "dwelling in the house of the Lord," has perhaps made the good things of his house familiar, common, and contemptible. O let us strive, and labour, and pray for recovering grace. Decays will grow upon us, and separate us farther from God, and from the delightful sense of his favour, unless we are "watchful, and repent and renew our first love."

THE END OF VOL. V.

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